



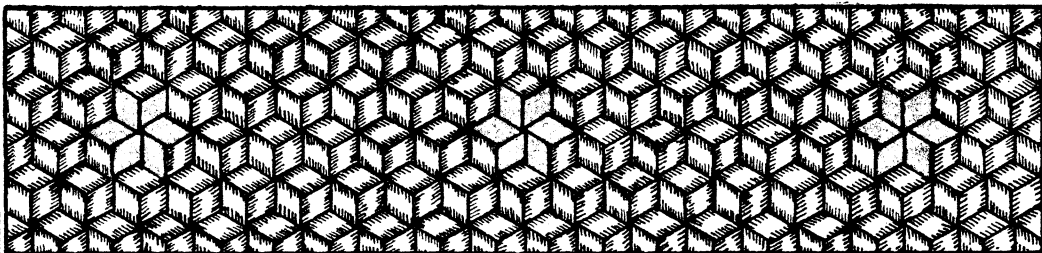
THE PHILIPPINE CRAFTSMAN

AUGUST, 1913

**A MAGAZINE PUBLISHED
AT MANILA BY THE BUREAU
OF EDUCATION DEVOTED TO THE
ADVANCEMENT OF INDUSTRIAL
INSTRUCTION IN THE PUBLIC
SCHOOLS OF THE PHILIPPINES**

Vol. II

NO. 2



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The Philippine Craftsman

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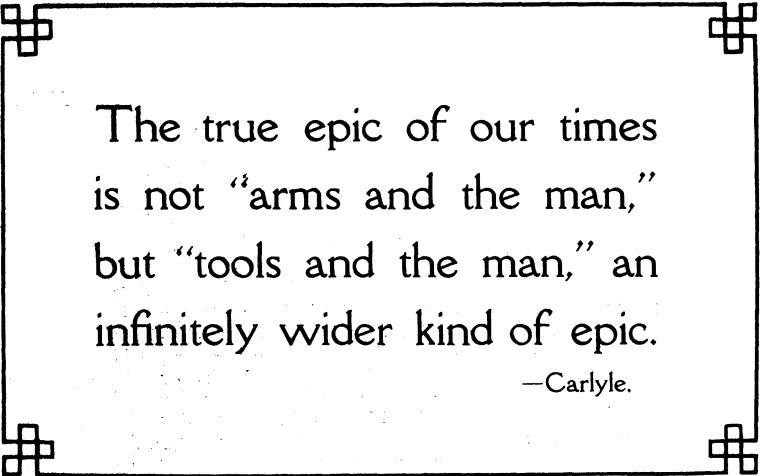
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The Philippine Craftsman is published by the Bureau of Education at Manila, P. I., monthly during nine months of the school year from July to March. The subscription price is ₱3 per year or ₱0.60 per copy, postage prepaid in the Philippines, the United States, and other countries under the same postal regulations; to countries not counted in this classification, ₱4 per year or ₱0.70 per copy. (₱1 equals \$0.50.) Address correspondence and make subscriptions payable to the Director of Education, Manila, P. I.

Entered at the Manila post office as second-class matter.



The true epic of our times
is not "arms and the man,"
but "tools and the man," an
infinitely wider kind of epic.

—Carlyle.

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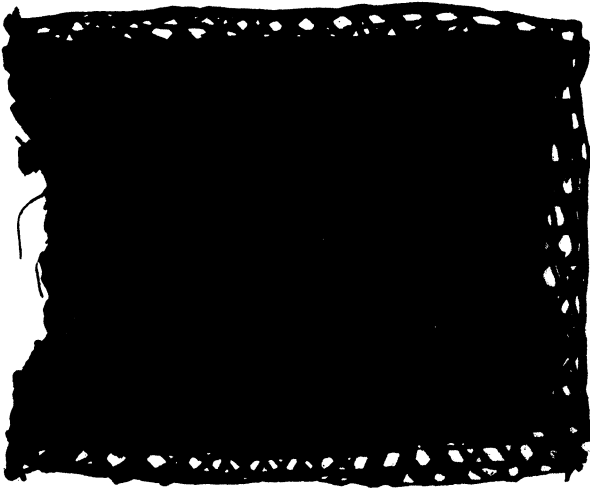
No. 2

PRIMITIVE PHILIPPINE BASKETRY.

By LUTHER PARKER, *Industrial Inspector.*

THE origin of basket making goes far back beyond the dawn of history with probably all races. Various materials were twisted into snares and traps in the hunting and fishing stages of culture, the most primitive stages in which man asserts his supremacy over the dumb beasts.

The etymology of the words in use in present day languages is interesting and points to the antiquity of this form of human



Moro fish trap, seacoast.

handiwork. The Spanish "cesto" is traced through the Latin to the Greek "kestos;" the Spanish "canastro" is from the Latin "canistrum," through the Greek "kanna," a reed, and probably to the Hebrew "ganeh," cane or reed; the English "basket" goes back to the Welsh "basged;" the Tagalog "bakol" is traceable to the word "bakul," common to both the Javanese and Malay languages.



Eel trap, Montesco, Occidental Negros.

A still deeper study of the derivation of the words used to name this receptacle would probably lead one back to the dead languages of the primitive Aryans.

The origin of the common bamboo and rattan baskets in universal use in the homes of the Filipinos, considered historically, reaches back into the period of tradition, and in form and design they are undoubtedly analogous to the baskets of the Malay Peninsula a full millennium or more ago.

The weaves and shapes of the basketry of certain sections of the Islands will undoubtedly help to throw light on the origin of the various peoples of the different cultural areas and is therefore of great ethnological value.

The common baskets of the Philippines are made principally

of bamboo and rattan. The baskets from the lowlands are usually of bamboo, with rattan for binder in some cases, while the baskets of the mountainous districts are chiefly of rattan. Decorative materials are nito, black and brown, yellow air roots, and stained or smoked bamboo.

Types of primitive baskets are few, and are conditioned by the use of each in the industrial stages to which people belong or through which they have passed—as the fishing and hunting



Basket for catching locusts, Ifugao.

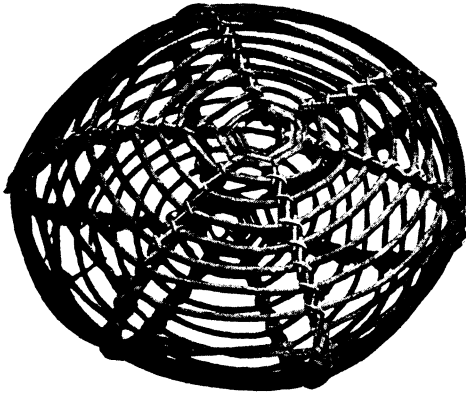
stage, the agricultural stage, and the beginnings of the stage of household industries.

The following general types of baskets are to be found universally in the Philippines: Snares and traps, holding baskets, carrying baskets, and separating baskets.

The common baskets of the Philippines are grouped under four general headings, arranged as nearly as possible in the probable order of development as to use and time, as follows:

- I. Snares and traps:
 - (a) Fish traps of seacoast, river, or pond.
 - (b) Bird and fowl snares.
 - (c) Eel trap (Ifugao).
 - (d) Locust snare.
- II. Holding baskets:
 - (a) Fish—
 1. Creel, spiny cover.
 2. Like round-top rice basket.
 - (b) Chicken nest and coop (fowler's basket).
 - (c) Locust.
 - (d) Rice, four-cornered, round top; jar.
 - (e) Winnowing basket, flat.
 - (f) Camote, upright.
 - (g) Betel-nut holder.
 - (h) Eating, common platter, individual trencher; ceremonial tray (Ifugao).
 - (i) Ceremonial marriage basket (Tinguian).
 - (j) Tampipi or telescope basket (Tiruray and Ifugao).
 - (k) Hexagonal covered basket (Tiruray).
- III. Carrying baskets:
 - (a) Fish.
 - (b) Fowler's (birds, chickens).
 - (c) Egg.
 - (d) Locust.
 - (e) Rice.
 - (f) Camote.
 - (g) Fruit (oranges, mangoes, lanzones).
 - (h) Hand bag or trinket basket.
 - (i) Cargo.
 - (j) Market, primitive (rice, fish, flat; modified handled types; Chinese, Japanese, Spanish).
- IV. Sieves and strainers:
 - (a) For securing snails.
 - (b) For separating rice and chaff.
 - (c) For straining rice or broth.

In many cases the same type of basket is used for both holding and carrying. This is true of the four-cornered, round-topped rice or fish basket, the "bakol" of the Tagalog.



Egg basket, Igorot.

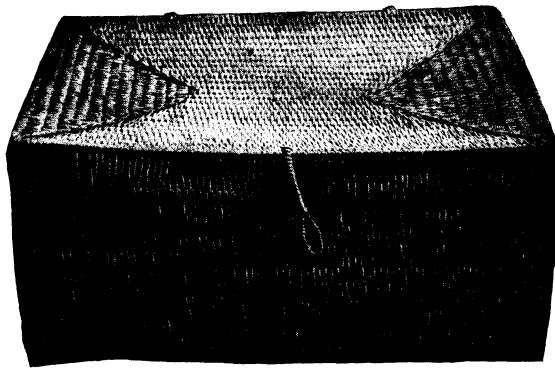
The winnowing basket (Tagalog "bilao") is used in winnowing rice, as a cover for the "bakol," as a display basket for goods in the market, and as a carrying basket for small market purchases. A similar basket is also used in some parts of the Islands as a trencher or platter.

The tampipi, or telescope basket, is common not only in the Christian provinces, but among the Tirurays in Mindanao and the Ifugaos in the Mountain Province.

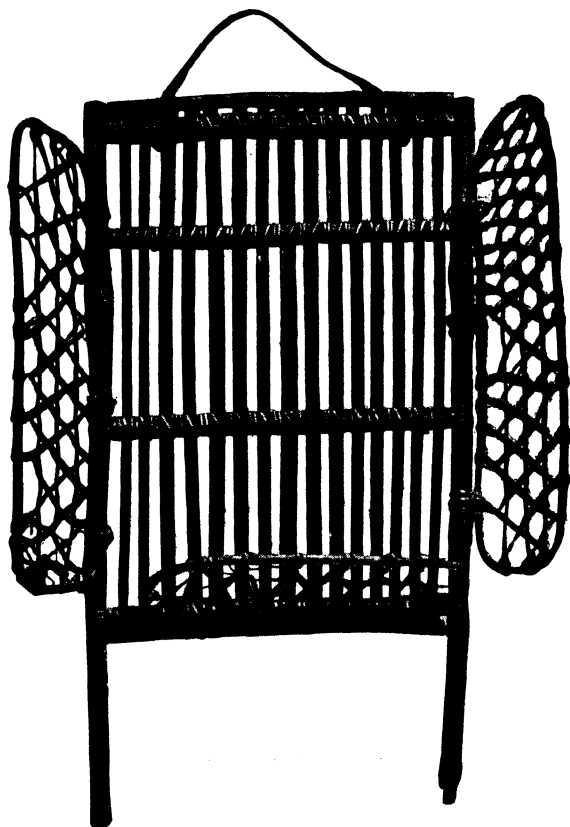
The primitive, carrying, market basket of the provinces of central Luzon has no handles, as it is customary to carry all loads on the head; while market baskets of mountaineers in general are supplied with carrying straps or small handles of some sort as among the pagan tribes of the Malay Peninsula.

The long-handled market baskets are innovations and show Chinese influence.

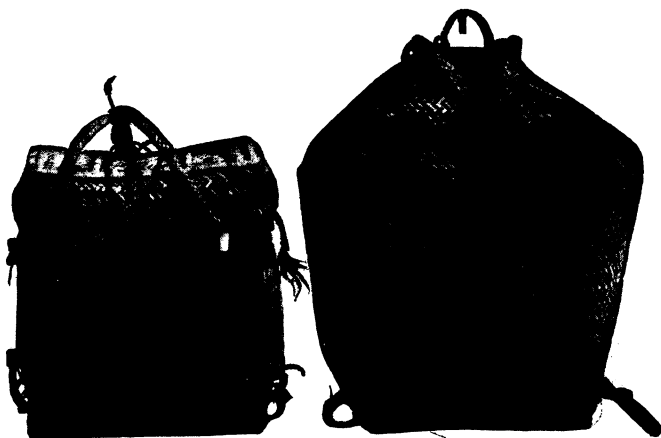
Just as the "bakol" is used for holding and carrying fish, rice, or other food products, so there is in use a modern variation of the fowler's basket which is made to do service as a shipping basket for oranges and mangoes.



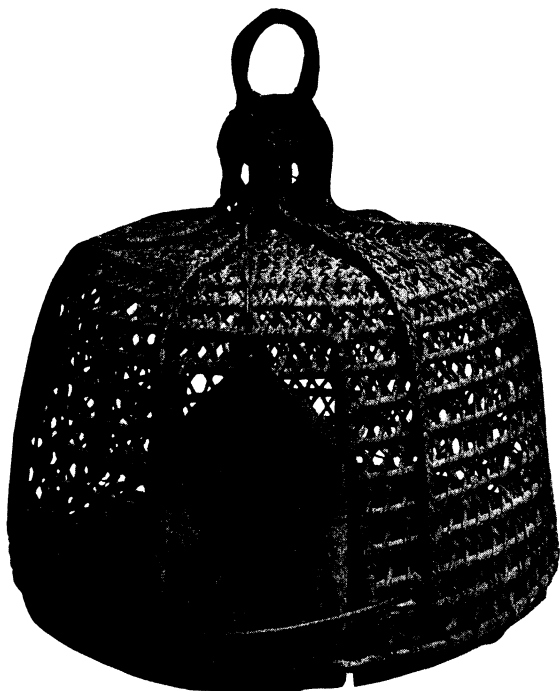
Storage basket for clothes (tampipi), Ifugao.



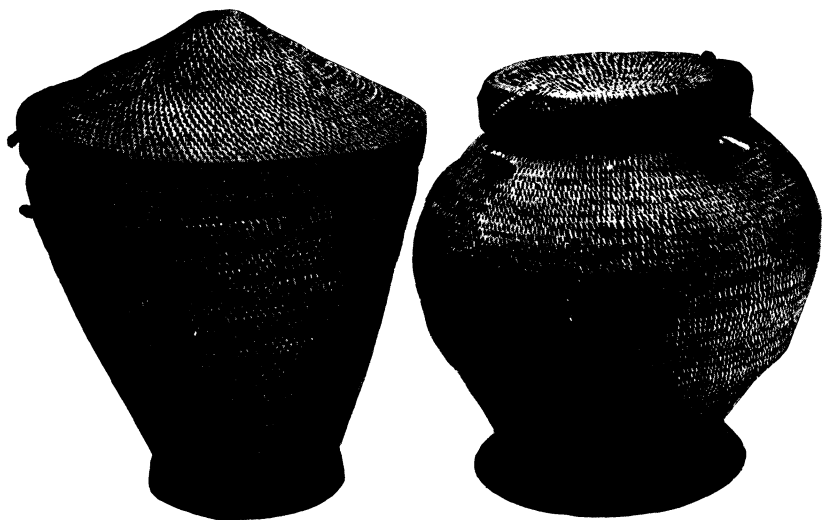
General cargo basket, Benguet Igorot.



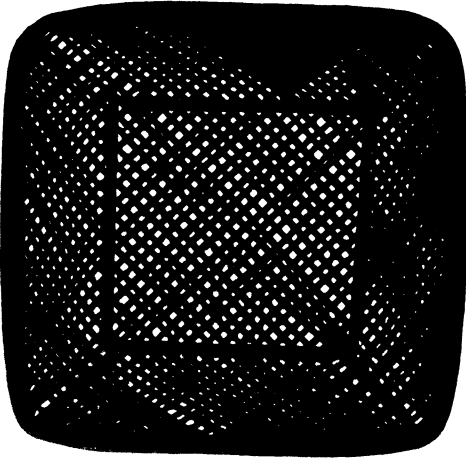
Carrying or back baskets. (First, Benguet Igorot; second, Ifugao.)



Chicken coop, Ifugao.



Storage baskets, Ifugao.



Snail sieve, Ifugao.

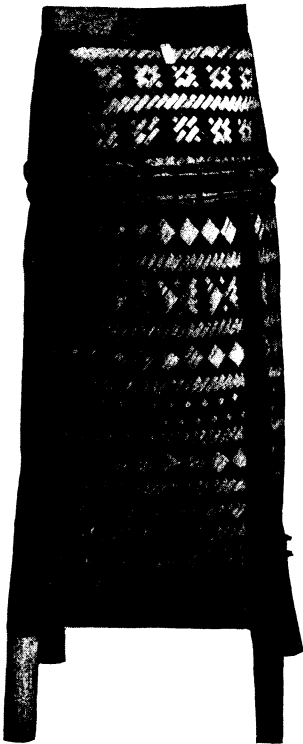
Baskets are usually carried by human beings, either on the head, back, or shoulders; but in some places panniers are carried by horses, bulls, or carabaos. This is especially noticeable on the hill roads of Laguna, Cavite, Batangas, and Tayabas.

Since several forms of the common basket are to be found in each home in the Philippine Islands, they are, on the whole, of

great economic importance, and the teaching of such work in the public schools may very properly and profitably be prosecuted.

The common baskets also serve as a good basis for the development of certain lines of fancy basketry for foreign export.

Certain sections of the Philippines, such as the great plain of central Luzon, contiguous to the metropolis, are limited to bamboo in respect to available raw materials, and the schools of this section find it a very convenient material with which to



Holding baskets, Tiruray.

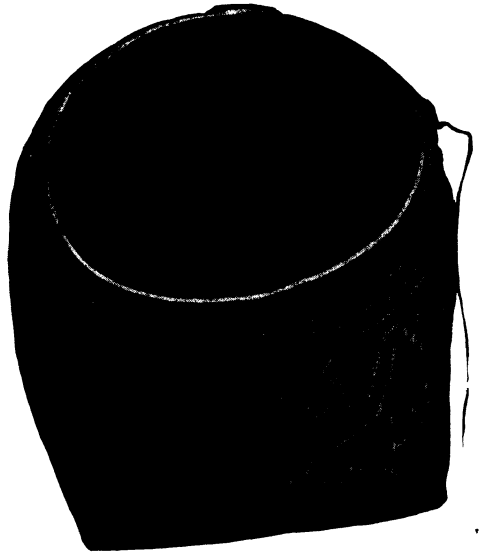
carry on the minor hand weaving.

Although bamboo basketry, at present, is undeveloped artistically, the practical value to the people makes up for the slight loss on the esthetic side; and the field is open to those who will make a study of Malay art as expressed in basketry and textile weaving to elevate certain common baskets in the artistic scale until they rank with the more ornate ones that have been introduced in the Philippine schools.

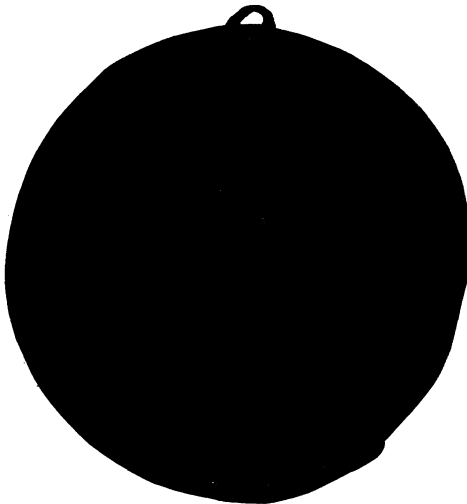
While the winnowing basket, rice basket, and betel-nut holder are useful unadorned, each of these can be made very attractive by means of nito or irao decorations, and by slight changes in form they may be made to serve other purposes, such as trays, workbaskets, button boxes, etc., thus elevating them in category

and placing them in the class for export.

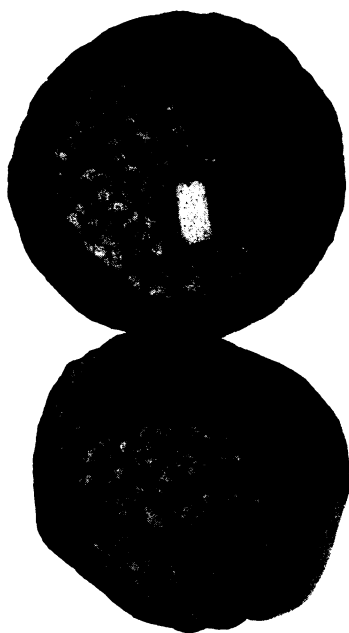
An attractive workbasket may be made of a modified and decorated rice basket with a winnowing basket used for a cover. This is also true of a modified camote basket. A very useful and serviceable market basket can also be developed from the rice basket made hexagonal in form, or from the hand bag or trinket basket of the mountain people. This trinket



Holding basket, Tiruray.



Individual food dish, Benguet Igorot.



Betel basket, Manobo.



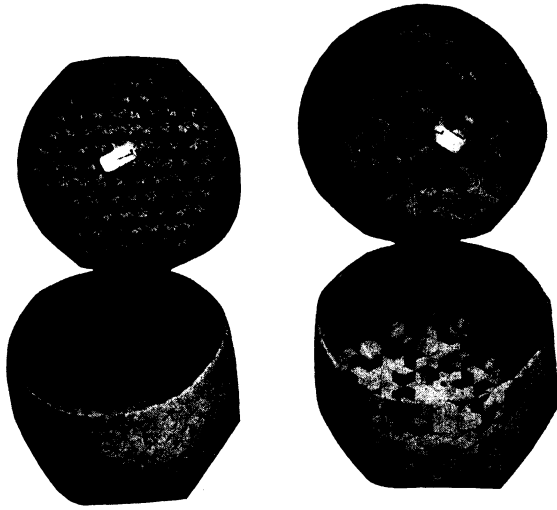
Satchels, Benguet Igorot.

basket, by the way, takes the place of the pocket, pocketbook, and hand bag of the European.

Artistic collar boxes, tie boxes, button boxes, and similar receptacles can be evolved from the betel box, than which there are few older types. Being in the nature of a luxury, the betel box received the attention of the artist handicraftsmen of the past, under subvention of powerful patrons, and embodies much that is interesting in the matter of typical designs. The mad weave of the Malays has thus been perpetuated in certain districts and to the present day can be obtained among the Tirurays, on the Island of Romblon, and in a few other sections.

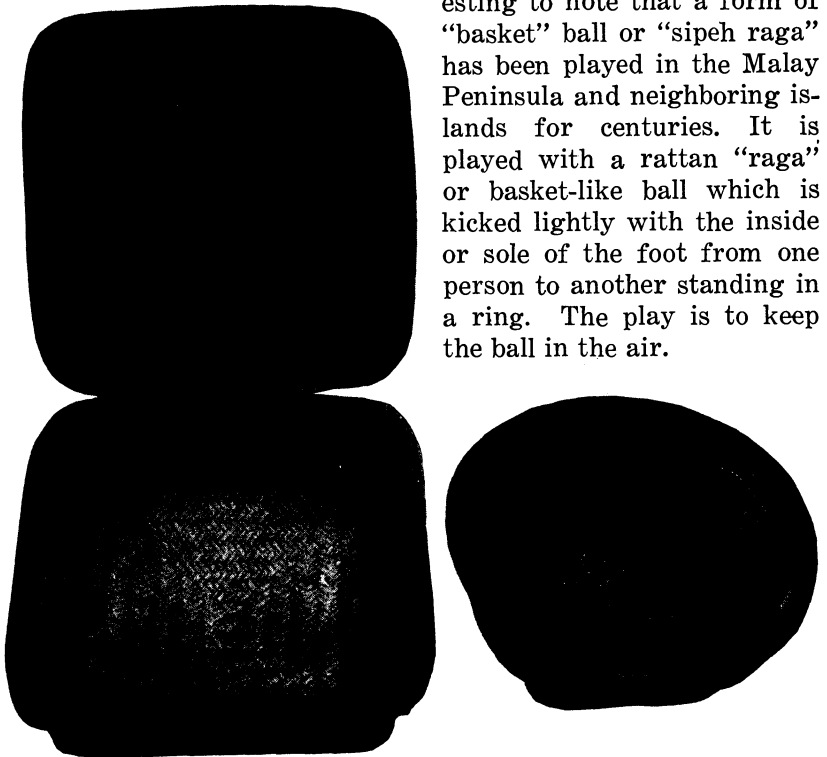
The clothes hamper follows from a modified camote-carrying basket, and a lunch basket can be developed from the hip basket of the mountaineers.

The waste-paper basket, the flower basket, and a few other types of fancy baskets are of such a character as to be readily developed from the common baskets. A modified camote-holding basket could be made into a very unique wastebasket, or even a flower basket.



Trinket baskets, Tiruray.

In passing, it may be interesting to note that a form of "basket" ball or "sipeh raga" has been played in the Malay Peninsula and neighboring islands for centuries. It is played with a rattan "raga" or basket-like ball which is kicked lightly with the inside or sole of the foot from one person to another standing in a ring. The play is to keep the ball in the air.



Ceremonial baskets to hold gifts at marriage feast. (First, Ifugao; second, Apayao.)

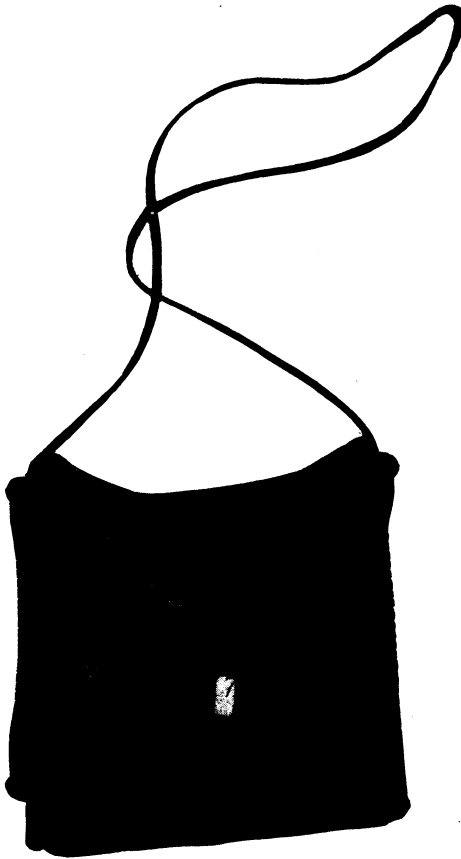
Certain residents of Manila have attempted to make this the national game under the name of "sipa," and sipa clubs have been formed and much written in favor of the game; but it has not been able to compete with the more stirring games of modern basket ball and baseball, being best suited to an anemic people desiring a very light form of sport. A modified "sipa" basket ball has been used by the children of some barrio schools as a substitute for a real, but costly, basket ball.

The question of the design and decoration of the primitive basketry of the Philippines is one of sufficient importance to merit separate treatment and is therefore only mentioned here

in passing. The decorations on the baskets of the Tirurays and Manobos are worthy of study, and it is believed that there will be found other sections of the Islands where equally interesting and attractive designs have persisted.

A proper understanding of basketry in the Philippine schools cannot be obtained without some knowledge of the basic principles of the subject and the scope and extent of common basketry as carried on by the people, and it is the object of the foregoing discussion to suggest some of the many very interesting lines of investigation that may be followed by instructors with profit to both the schools and the investigators.

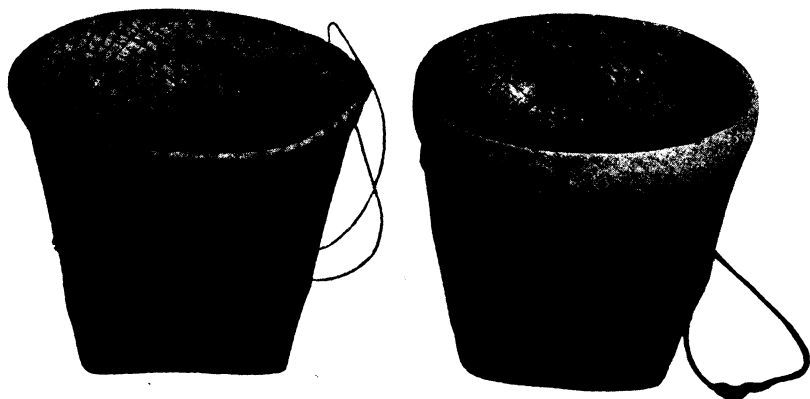
A full appreciation of the importance of bamboo as a material for supplying the homes of the masses with household utensils and fur-



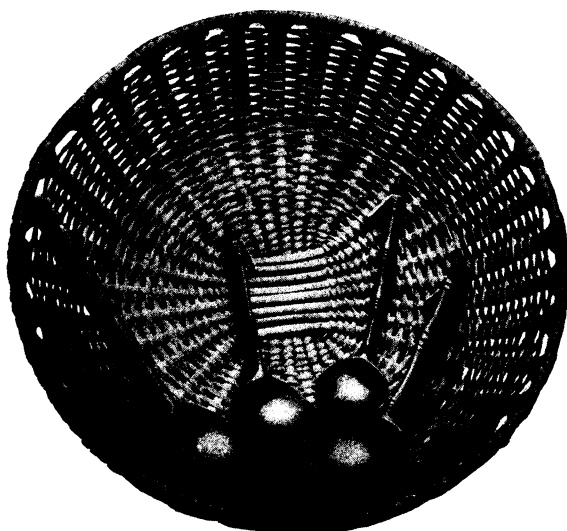
Satohel, Samal Moro.

niture can only be obtained by actual observation of the conditions under which the people live, and such a study carried on systematically and sympathetically by teachers of industrial work

will serve to raise the standard of living step by step until bamboo has been succeeded by wood, metal, and costlier materials.



Manobo carrying baskets of pandan leaves strengthened with rattan.



Communal platter with wooden spoons "borrowed" from the Ifugaos, Benguet Igorot.

NOTES FROM COSTA RICA.

An official report has been furnished to the Director of Education by Samuel T. Lee, American consul at San José, Costa Rica, describing the public-school system of Costa Rica. The data contained in the report were prepared by Señor don Roberto Brenes Mesén, subsecretary of public instruction. An extract from this report is as follows:

There is a set program for the construction of school buildings, which requires that each year 15 to 20 schools be built in conformity with architectural plans prepared under the direction of the minister of public instruction.

The industrial schools now established by the Government are (1) a weaving school, (2) a dressmaking and tailoring school, (3) a hat-making school, and (4) a school of domestic science.

The school of domestic science forms one of the departments of the Young Ladies' Seminary (Colegio Superior de Señoritas).

Besides the foregoing there are (1) a commercial department, (2) a technical department, and (3) an agricultural department, which are run in connection with "El Liceo de Costa Rica." Plans are now being considered for the establishment of a trades school during the present year (1912).

Classes in physical culture are conducted in all of the primary schools of the first grade, and in all of the secondary schools.

In general, the public is satisfied with the instruction imparted in the public schools of the country, and is of the opinion that the school funds are well employed. However, there is a growing demand for more industrial training, and it is with this in mind that the Government is planning to establish a well-equipped trades school as soon as possible.

o o o

A school of arts and trades for women will soon be established in Caracas, Venezuela, by the Government. The school will have a two-year course and will offer instruction in domestic hygiene, business training, needlework, millinery, the making of artificial flowers, floriculture, decorative designing, typesetting and linotype operating, nursing, photography, laundry work, hat weaving, cooking, and domestic economy.

VOCATIONAL GUIDANCE,

NURSING AS A VOCATION.

By E. P. McCLOSKEY, *Chief Nurse and Superintendent, Philippine Training School for Nurses.*

[Illustrations by Bureau of Science, Manila.]

QUALIFICATIONS.

IT is a common belief that nursing consists chiefly of manual labor and that it neither requires a high degree of education nor affords a scope for its utilization. Such a belief is founded upon the failure to recognize that the opportunities for the trained nurse are increasing and growing every day. So wide a variety of important work is now required of her that it would appear that she is restricted in her opportunities only by her own personal limitations. Even though she keeps strictly to nursing as her life work, it is hardly possible for her to have too much education. As her knowledge grows, so will the interest in her work increase, because it can be done in an intelligent manner. The best education—the most thorough and the broadest—is not wasted in the profession of nursing. The superficially educated woman, with an untrained mind, is at a distinct disadvantage in the wards of the hospitals of to-day.

All nurses need not be robust; but no one should think of taking up the vocation of nursing unless possessing at least average health and paying proper attention to the laws of personal hygiene. Both men and women are more likely to be benefited than injured, either in body or in mind, by following the prescribed training-school course.

The best age for unmarried Filipinos, either male or female, at which to take up the profession of nursing is between 18 and 22. A prospective nurse should be at least 5 feet 2 inches in height and should weigh not less than 100 pounds.

Good physical health is the first essential qualification; the second is an education, not only theoretical, but also practical. Personal appearance is of importance. One need not be pretty or handsome, but one should be well poised—mentally, morally, and physically. Given these qualifications, no other occupation is better adapted than nursing to render Filipino men and women

self-reliant, of steady nerve, observant, and responsible. The trained nurse should always come from the healthy, cultured, and properly trained classes of the Philippine Islands.

OPPORTUNITY FOR CONTINUATION OF TRAINING.

There is opportunity for continuation of training and advancement in any of the several following branches: Special nursing, general; special nursing, obstetrical; special nursing, children; supervisors; ward supervisors; operating-room supervisors; free-dispensary supervisors; dieteticians; district nurses; in-



One of the inner courts, Philippine General Hospital.

structors; superintendents of small hospitals and sanitary inspectors; supervisors of eye, ear, nose, and throat departments.

TRAINING-SCHOOL COURSES.

The nature of the occupation while in training and the divisions of work involved in it are divided as follows: Preliminary, six months; junior, one year; intermediate, one year; senior, one year.

During the preliminary course of instruction the following subjects will be taught: Anatomy, physiology, general nursing, massage, hospital housekeeping, practical etiquette, sewing, personal hygiene, English, weights and measures, keeping hospital



Corridor, Philippine General Hospital.

records, ward practice, dietetics, hospital economics, hospital etiquette, athletics.

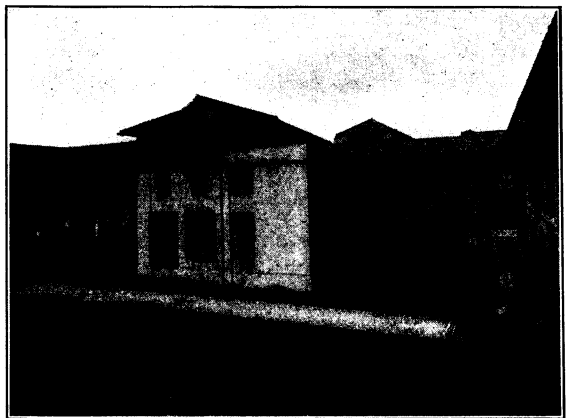
During the junior year the following subjects will be taught: Anatomy, physiology, materia medica, pharmacology and pharmacy, bacteriology, urine analysis, operating technique, English, obstetrics, massage, minor surgery, genito-urinary

nursing, infant feeding, genito-urinary surgery, chronic diseases, practical nursing, and dietetics.

During the intermediate year the following subjects will be taught: Surgery, dietetics, English, infant feeding, electrotherapeutics, ethics, acute diseases, chronic diseases, surgical emergency work, diseases of the skin, diseases of the eye, ear, nose, and throat, genito-urinary nursing, obstetrics, dispensary surgery, operating-room technique, contagious diseases, nursing technique on diseases of the eye, ear, nose, and throat, general hygiene, and practical nursing.

During the senior year the following subjects will be taught: English, nursing ethics, sanitation, obstetrics, dispensary nursing, infant feeding, children's diseases, nervous and mental diseases, surgery, operating-room technique, practical anæsthesia, general medicine, diseases of the eye, ear, nose, and throat, electrotherapeutics, and practical nursing.

Experience is gained in the wards of the Philippine General Hospital, the San Lazaro Hospitals and the other hospitals of the Bureau of Health, and in the dispensary of the Philippine General Hospital.



The operating pavilion, Philippine General Hospital.

ENTRANCE TO TRAINING SCHOOL, PHILIPPINE GENERAL HOSPITAL.

At present there are 189 pupil nurses at the Philippine General Hospital. These are evenly distributed throughout the junior, intermediate, and senior years. Entrance classes consist of 80 pupils, of whom 50 are girls and 30 are boys. The preliminary course is six months in duration and begins on September 15 of each year. Applications for admission to this course may be forwarded at any time during the year before July 1, inasmuch as the selection of candidates is made during the months of July and August.

SPECIAL DANGERS.

There are no special dangers except those incident to handling dangerous communicable diseases, and here there is only a small degree of danger to health, provided the nurse follows the methods of prevention taught during her course of instruction. In any event, the element of constant danger furnishes an incentive to better work and greater care and the vocation offers rewards in relief of suffering mankind that more than compensate for the disadvantages.

Owing to the short hours of work, the systematic manner in which the same is carried out, and the ample provision for rest and recreation, there is little opportunity for the pupil to be affected by strain from overwork or monotony.

PAY.

So far as governmental and institutional service are concerned, the rate of pay for graduates, with the usual civil-service perquisites, is as follows: First six months, ₱50 per month, subsistence, quarters, and ₱8 laundry allowance. If this term of service has been satisfactory, the nurse is promoted to ₱60 per month with the same allowance. Post-graduate pupil nurses receive ₱30 per month, subsistence, quarters, and ₱6 laundry allowance.

Pupils are furnished subsistence and quarters and given a monthly allowance of ₱16 for the six months' preliminary course, ₱18 per month for the junior and intermediate years, ₱20 for the senior year. This allowance is to cover expense of laundry, uniforms, books, and all other equipment, and is in no wise intended as full salary, the professional education received being considered sufficient additional compensation.

The pay for private nursing is from ₱5 to ₱10 per day. The pay for district nursing is, minimum ₱50 and maximum ₱85 per month without allowances.



Chief nurse and female pupil nurses.

The demand for the trained nurse is increasing very rapidly in this country, much more rapidly than the increase in the

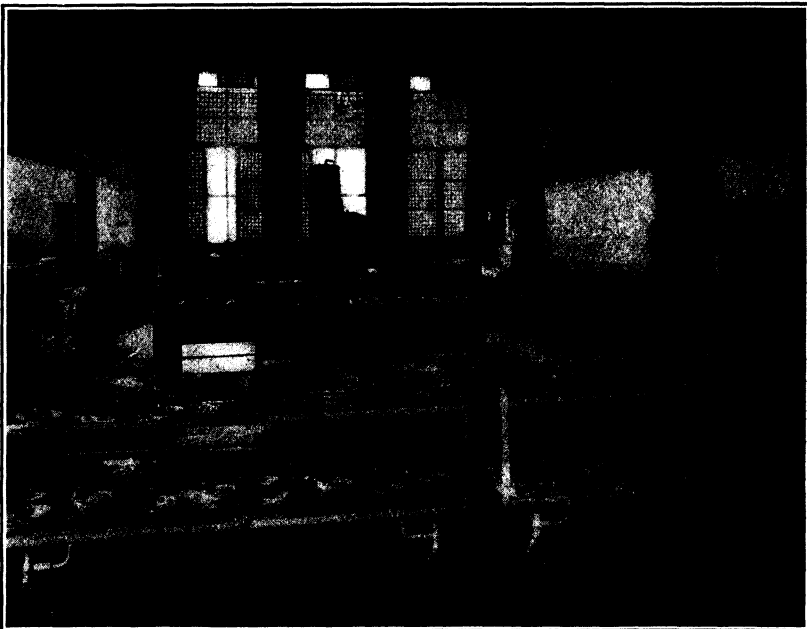


Chief nurse and male pupil nurses.

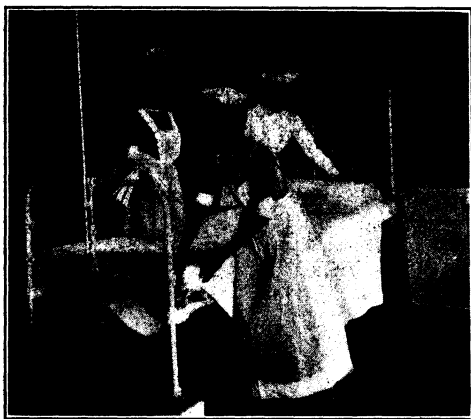


A female ward, Philippine General Hospital.

available supply. It is almost certain that there will be a satisfactory increase in pay above the already rather remunerative rate paid in this profession.



Kitchen, Philippine General Hospital.



A part of the training.

COMMENTS ON THE PROFESSION.

The profession of nursing is so young in the Philippine Islands that little value could be obtained from a discussion of this point.

It is interesting to note that all the graduates from the Philippine Training School for Nurses, with the exception of those who have married, have continued

their work to date and are enthusiastic in the discharge of their duties.

Of the 49 graduates of the Philippine Training School for Nurses, 44 are employed in the Government service at salaries from ₱30 to ₱60 a month, 3 are practicing the profession in private capacities, and 2 others are employed in the various phases of district nursing in the cities of Manila and Cebu at salaries from ₱60 to ₱75 a month.

There is a charm to district nursing that, in spite of its



Babies at the Philippine General Hospital.

disagreeable functions, makes this part of the profession a very desirable one. A few months or years in this work gives the trained nurse an insight into the social conditions of the poor people. She obtains a knowledge of the useless suffering and unhappiness of the world, that is not acquired at first-hand by any other person.

The great hygienic need of trained nurses in this country, the special aptitude of Filipino men and women in this profession, the rewards in money, and the knowledge of duty well done make this profession one of the most promising and attractive. It offers one of the best methods of developing the Filipino race that it is possible to institute.



Weighing the baby.

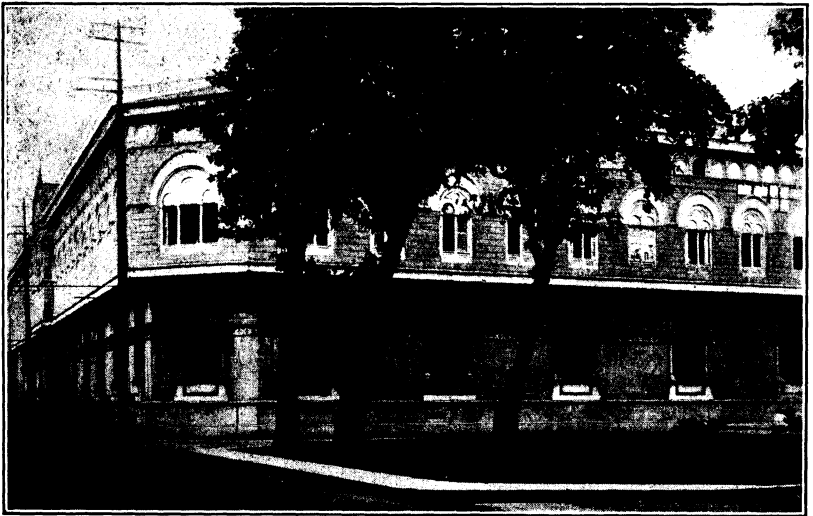


St. Luke's Hospital, Manila.

ST. PAUL'S HOSPITAL (CATHOLIC).

St. Paul's Hospital at Manila conducts practically the same system of training for nurses as that of the Philippine General Hospital. At present there are 26 pupil nurses, 9 of whom are in the first year, 7 in the second, and 10 in the third year class. Upon graduation, nurses receive ₱50 per month and expenses.

Candidates for admission must be in good health and between 17 and 28 years of age. They must show by previous education that they are fitted to study nursing and for this purpose must produce an intermediate certificate from the public schools, or



St. Paul's Hospital, Manila.

its equivalent. In addition they must pass an examination satisfactory to the training-school committee at the end of the first month of residence in the hospital. Their continuance in the school is dependent throughout the course on the observance of its rules and on their own state of health.

The school year begins in June, but in order to permit of preparation for the preliminary examination, candidates will be allowed to enter during the preceding months of March, April, and May, provided room can be made for them. Applications for admission to this school should be sent to the Mother Superior as early as January of next year, inasmuch as there are already applications on file for the opening of the next school year.

Board, uniforms, laundry, and textbooks will be provided throughout the course, and six weeks' vacation allowed each year, but no other remuneration is offered the nurses for services rendered, either in the hospital or to patients in private houses, the instruction given them being deemed more than an equivalent therefor.

In addition to the regular pupil nurses, a few girls are admitted each year who do not intend to take up nursing as a profession, but who desire to make themselves proficient in this work as part of their preparation for future home duties. Such students pay a tuition fee and make special arrangements in respect to this matter with the Mother Superior.

ST. LUKE'S HOSPITAL (EPISCOPALIAN).

St. Luke's Hospital is a small mission hospital in Manila containing 50 beds. The training class now comprises 17 pupil nurses, of whom 5 are in the probational class, 5 in the junior class, 4 in the intermediate, and 3 in the senior. A total of 11 have thus far been graduated. The requirements for admission are practically the same as those for the Philippine General Hospital and St. Paul's. Pupil nurses receive no compensation, but pay nothing for their board, training, texts, or laundry. Applications showing the completion of the intermediate course, accompanied by suitable recommendations and medical certificates, must be sent in advance to the hospital authorities.

[NOTE.—This is the sixth of a series of articles on Vocational Guidance. The vocations of foresters, marine officers, and teachers, have been considered in previous issues.]

Lumber now being cut in the Philippine Islands is being laid down in New York at \$15 per thousand. When the Panama Canal is opened, the cost of transportation certainly will not be more, and the time which will be required to get it to New Orleans or to New York will be considerably lessened. Is it not time for the furniture manufacturers who expect to be making furniture from wood for some years to come to investigate the possibilities of backing up their investment in plant, reputation, and good will with enough of raw material to make them independent?—(From The Furniture Manufacturer and Artisan.)

NOTES ON HOUSEHOLD INDUSTRIES IN SWITZERLAND AND ITALY.

By GLENN W. CAULKINS, *General Office.*

THE following notes give an account of a trip in Switzerland and northern Italy, which was made with the idea of observing the manner in which certain household industries are carried on in those countries, and the methods used in their promotion. No extended investigations were undertaken, due to the limited time at my disposal, from December 26, 1912, to January 10, 1913, and to the large amount of territory which was covered. The cities and towns visited were St. Gall and Appenzell in Switzerland, and Venice, Rapallo, Cantú, and Rome in Italy.

ST. GALL.

Before leaving the United States, inquiries were made as to the place in Europe where one could see the finest embroidery produced, and the advice in every instance was to go to Appenzell in Switzerland. As the town of Appenzell is only 10 miles distant from the city of St. Gall, the embroidery center of the world, advantage was taken of my short stay there to observe at first hand the production of machine embroidery and lace, and to visit the St. Gall Industrial and Commercial Museum. In this every assistance was given by Mr. D. I. Murphy, the American consul at St. Gall, and by Messrs. Rechsteiner and Hirschfeld, large manufacturers of embroidery and lace, who placed at my disposal facilities for observing every detail of the industry.

St. Gall is a city of approximately 55,000 inhabitants, practically all of whom depend upon the embroidery industry for their existence. It is a modern and well-kept city of comfortable homes and substantially constructed business blocks and factories. Evidences of prosperity are seen on all sides. Local pride abounds; I was assured that it is "the most prosperous and wealthy city of its size in the world," and could see no reason to doubt the statement. The United States collects tribute on its industries, through import duties on manufactured articles, approximately ₱16,000,000 annually.

THE MACHINE EMBROIDERY INDUSTRY.

While it would probably be impracticable to attempt to produce machine embroidery in the Philippines, some account of this important industry may be interesting. A day was spent in

going through one of the factories and the warehouse of Messrs. Rechsteiner and Hirschfeld and in observing almost every process in the manufacture of machine embroidery and lace.

There are two varieties of machines used, the power, or *schiffli*, machines which are grouped in the factories outside of the city, and the hand machines, which are found in the homes of the individual workers. The power machines are operated by electricity, which is furnished by the city. They are either $6\frac{3}{4}$ yards or $13\frac{1}{2}$ yards in length. The hand machines are only $4\frac{1}{2}$ yards long and are used for the production of the finer grades of machine embroidery. As electricity is becoming more generally used and is furnished at reasonable rates, many of the hand machines in the cottages are being replaced with small power machines.

The processes of manufacture are as follows: The order is received by the firm in St. Gall with specifications as to design, cloth, yarns, etc. The cloth used is English cambric or nainsook or Swiss muslin and comes in 63-yard lengths. It is cut into lengths according to the size of the machine, placed on a vertical frame on the machine and is then embroidered or "stitched." The machine operators or stitchers follow the lines of the designs on a pantograph attached to the machine and the pattern is produced on the foundation cloth in as many repeats, or as many times, as there may be needles used. From the machine the embroidery goes to the inspecting room, where it is pinned on long tables, and clippers are used to remove all thread ends. It then goes on the inspecting tables and defects are marked with blue chalk, and after being repaired with blue thread on a sewing machine it goes again to the inspecting table and further defects are marked with red chalk and are repaired as before. It then goes through a brushing and shearing process and is sent to the bleacheries for bleaching and starching. It is then sent to the warehouse, where it is again inspected and put up for shipment.

The machine lace manufactured in St. Gall is made on the *schiffli* embroidery machine and is known as "burnt-out lace." The lace is made, or embroidered, on a foundation cloth of animal fiber such as silk or wool, using a vegetable yarn, usually cotton. After manufacture, it is placed in a chemical bath and the foundation cloth of animal fiber disappears, leaving the cotton lace.

The warehouses are mostly located in the town of St. Gall. They are large buildings from 3 to 5 stories high. Here are rooms full of samples and embroidery patterns, indexed and carefully arranged, and stocks of cloth and yarns. In these

buildings are also the main offices, rooms for designers and enlargers, and rooms for inspecting and packing the finished goods.

The department of design in each of the larger establishments employs from 15 to 25 designers and enlargers. They are the most highly paid employees, excepting only the managers. Rough sketches of designs may be submitted with orders or samples may be sent to be duplicated or modified. These are all worked up in the designing room. They are first drawn the exact size they will have on the article to be embroidered and are then sent to the enlargers, who make the designs six times larger. The pattern is then ready to be placed on the pantograph which is attached to the embroidery machine. According to a report of the American treasury agent in St. Gall, there are 7,000 designers and clerks employed in the embroidery establishments there.

The girls and women who work in the factories receive from ₱0.80 to ₱1.20 a day.

THE ST. GALL INDUSTRIAL AND COMMERCIAL MUSEUM.

Mr. Murphy accompanied me to the museum and introduced me to the director, Mr. Emil Wild, who very kindly showed me how this institution is used in the interest of the embroidery industry.

Industrial and commercial museums are important factors in the promotion of industrial education in Switzerland. Permanent exhibitions of raw materials, models, half and fully manufactured articles, tools, fruits, patterns, designs, and machinery, illustrating every process in the leading industries, are found in many cities. Directors and assistants, experts in the various industries, are at hand to give information concerning the museums and also to conduct technical and trade courses covering every phase of the industry. In connection with these institutions are departments for communicating information and giving advice to handicraftsmen about new methods and new machinery. This advice is given without charge. Usually a good technical library will be found, and often traveling teachers are provided who go from place to place giving instruction in the handicrafts. These institutions are in close touch with the industries which they were organized to promote, and are kept up to date.

The St. Gall Industrial and Commercial Museum is fairly typical of many in other industrial centers. Embroidery is the one industry of St. Gall, and the museum was established by the

practical business men of the community for the purpose of promoting this industry. It was later taken over by the canton. The museum, including the embroidery and lace collections, the collection of designs, the library and reading room, the drawing and designing room, class and lecture rooms, occupies the three floors of a substantial and well-arranged building near the center of the town. The most notable features of the museum are indicated in the succeeding paragraphs:

(a) A very complete exhibition of embroidery and lace is displayed, illustrating the history and development of these industries, and including the best specimens of the needleworker's art from all countries. The larger part of the exhibit, known as the "Ikle collection," was given to the museum in 1904 by Mr. Leopold Ikle, a wealthy and public-spirited resident of St. Gall. This permanent display of the finest embroidery and lace of all ages and countries is an inspiration and guide to designers and needleworkers and is extensively used.

(b) The library and reading room contains the principal books and art and trade periodicals devoted to the embroidery industry and to design. An attendant is always at hand to assist students and visitors. Books and periodicals are conveniently arranged so as to be readily accessible to readers, and chairs and tables are provided.

(c) Connected with the library and reading room is a room for the use of designers. Around the walls are arranged cases of embroidered designs. Complete sets, by years, of commercial designs covering every embroidered article, and extending back a dozen years, are on file. The designs are catalogued and conveniently arranged for ready use. In the center of the room are tables for the use of designers. Every afternoon there will be found here from 20 to 30 designers—students and employees from the commercial houses.

(d) The main building also contains the offices of the director and his assistants and the lecture and class rooms. Directly in front of the main building and on the opposite side of the street is the school of embroidery which is under the direction of the museum.

One is struck with the idea of utility apparent in the organization of the museum. As the director, Mr. Wild, expressed it, "It is meant to be used." It is, in fact, a working laboratory for the promotion of the embroidery industry. The director and his assistants are busy and capable men and are experts in their respective lines. Mr. Wild is also a member of the Swiss Parliament.

APPENZELL HAND EMBROIDERY.

Appenzell is a small canton, or rather two small ones, entirely surrounded by the larger canton of St. Gall. Here is made the exquisite hand embroidery for which this region is famous. The work is carried on entirely as a home industry; a few of the larger producers have perhaps a half dozen workers at their homes.

The materials and designs are furnished to the workers by the local embroidery merchants, who in turn may have received them from the exporters. The work is highly specialized, each embroiderer doing only a certain stitch or a certain kind of open work, in which she becomes expert. One instance came to my attention where a small design in a handkerchief corner was sent to four workers before it was finished. The first received 48 centavos for her work, the second 14 centavos, the third 3 centavos, and the fourth 8 centavos, or a total of 73 centavos for the completed design. Many of the embroiderers earn as much as ₱1.20 a day and some who are exceptionally expert even more. Wages are higher in summer than in winter. There are probably between 2,500 and 3,500 hand embroiderers in the district.

Some of the local dealers have branch shops in the larger European cities and especially at the tourist centers; the latter are open only during the tourist season. These dealers employ designers who keep in touch with the current styles. This is a comparatively easy matter on account of the proximity to St. Gall, the inherent capacity of the Appenzell people in design, and the environment where men and women grow up and live with embroidery and design a part of their everyday lives.

There is one school in Appenzell in which hand embroidery is taught, but it is open only two or three months during the year. There is little need for special instruction, as every home is a practical school where the children learn to do work of the highest order by actual experience under the guidance of the older members of the family.

The fact that hand embroidery is flourishing in this part of Switzerland, where wages and the standard of living are generally higher than in other continental countries, demonstrates that low wages are not necessary to the success of this industry. Appenzell waists of the ordinary commercial grade retail in St. Gall for from ₱5 to ₱20 each, depending upon the amount of work in the design, the quality of the work, and the grade of materials used. Linen handkerchiefs of the same grade retail at from ₱1 to ₱2 each. The finest handkerchiefs, real works of art, retail at from ₱50 to ₱80 each.

The demand for Appenzell handwork is greater than the supply; I was told that the St. Gall buyers could handle twice the amount produced. There is no demand for inferior hand embroidery, as it cannot compete with the better grade of machine work, since the latter can be produced much more cheaply. Handkerchiefs of fair quality are embroidered on the machines 48 at a time. I was shown machine-embroidered waists, with hand-made openwork, superior in workmanship and design to the ordinary commercial Philippine waists, that retail in the United States for ₱10 each. Most of the work was on linen, but a wide variety of materials and designs was used, following the demands of a trade which extends to many countries. Some of the best work that I saw was on hand-spun linen which had been especially produced for this work.

THE LACE INDUSTRY IN VENICE.

From Switzerland I proceeded to Venice, which is one of the centers of the handmade-lace industry.

The production of the exquisite laces which had been carried on for centuries in Venice and the near-by towns was interrupted by the fall of the Republic, and the industry had completely died out before the middle of the nineteenth century. The revival of this industry and its growth to its present large proportions involve the solution of problems analogous to those which confront us in the Philippines.

In Cantú, Rapallo, and other Italian lace centers, Venice excepted, the industry has had a more or less natural growth covering a long period of time and with little outside influence brought to bear upon it. In Venice, where the industry was revived some forty years ago through the persistent efforts of associations, commercial organizations, and private individuals, the business is modern and highly organized. The best work of other countries was brought here to be studied and reproduced or modified. Schools, museums, the patronage of royalty and the nobility, and the introduction of modern business methods contributed to the success of the undertaking—the establishment of a profitable home industry and the resultant uplift of a community.

THE FIRM OF JESURUM.

The center of the industry is Venice, where the large lace firms have their headquarters. I will indicate briefly something of the history and organization of one of the principal firms, that

of M. Jesurum & Co. The founder of the firm was the late Michelangelo Jesurum who, in 1870, set about studying the reproduction of old lace and founded the first professional schools at Venice and Pellestrina. This was the beginning of the large industry which grew up under his direction involving the employment of approximately 5,000 lace makers and embroiderers. Departments and establishments for the production and disposition of the lace and for carrying on the business have developed with the growth of the industry. They are, briefly:

(a) The central establishment in Venice including the main office; the showrooms and exhibit covering the departments of lace trimmings, household linen, curtains and draperies, damasks, brocades and velvets, and old lace; the lace manufactory and school; the department and school of design; and the school for repairing old lace.

The showrooms and exhibit contain a vast assortment of every line of work produced by the firm, including practically all varieties of lace. There are edgings and insertions from ₱0.40 to ₱700 a meter, handkerchiefs from ₱2 to ₱40, scarfs and veils from ₱10 to ₱2,000, fans from ₱10 to ₱400, tablecloths with napkins to match from ₱40 to ₱4,000, linen and lace centerpieces from ₱40 to ₱2,000, bedspreads from ₱80 to ₱2,000. Attendants are provided to show visitors through the rooms. Buyers from Europe and America come here to make purchases from the large stock which is always kept on hand, and to leave orders. The firm will also deliver any of its wares to any part of Italy or England (there being no import duty in the latter country) for inspection without charge or obligation to purchase. To other countries it sends photographs, patterns, and samples.

The department of old lace was organized for the purchase of antique laces in large and small lots or even small pieces or fragments for study or for the Pellestrina Museum. After the design and point of the old laces have been studied and reproduced they are either sold or placed in the museum. In connection with this department is a special school for repairing old lace.

The department of design includes three schools for training designers for the various branches of the industry. In this department designs are originated, old designs studied, copied, and modified, and special designs executed for customers.

The manufactory and lace school occupy long galleries in the main building. Workers come to the school from Venice and near-by towns to perfect themselves in a certain kind of work.

The work is highly specialized. Several workers will be employed on one article, each doing the part for which she has been especially trained. Very few of the pupils remain in the manufactory, but as soon as they become proficient they return to their homes to carry on the work there by order.

(b) The professional lace schools in Burano, Murano, Venice, Chioggia, Pellestrina, and Torcello, where thorough courses are given in lace making.

(c) The special manufactories in Burano, Venice, and Pellestrina for the production of the finer varieties of lace—mostly needle point. The finest laces are produced under the direct supervision of expert instructors or supervisors.

(d) The Museum of Old and Modern Lace at Pellestrina. Here are exhibited the finest specimens of the lace makers' art—Alençon, old and modern Brussels, Venetian in Rosaline, raised and rose point, filet, Valenciennes, Rococó, renaissance, Chantilly—all of which are reproduced by Jesurum workers. The value of such an exhibit in fixing high standards in design and workmanship is obvious.

(e) Shops in Venice, Rome, and Lucerne, the latter open during the tourist season only.

The various establishments and departments comprising the house of Jesurum are highly organized; they are presided over by specialists and experts and respond quickly to the demands made upon them. One of the admirable features is the provision made for training the workers, both designers and lace makers. While there are other schools which give instruction in this work, notably the Royal School of Lace Making at Burano, the leading firms have their own departments for this purpose. This brief mention is made relative to the organization of this firm and to what it has accomplished, as the situation in Venice in 1870 was very similar to that which exists in the Philippines at the present time. There was a very definite need in Venice, as there is now in the Philippines, for the establishment of home industries, and the results accomplished there provide a very definite object lesson for us here.

In general, the lace and embroidery industry is a very delicate one, as the change of vogue prohibits the accumulation of large stocks. In this respect hand work has an advantage over machine work in that comparatively large stocks of certain staple articles of high-grade workmanship and design, not so responsive to the caprice of fashion, may be kept on hand.

RAPALLO.

Another center of lace making is the Riviera di Levante, between the ports of Genoa and Spezia. Rapallo and Santa Marguerita, some 17 miles east of Genoa, are the greatest producers. The lace made here is a rather coarse bobbin lace; the industry has been long established. There are probably 3,000 lace makers in the district.

Rapallo is a popular tourist resort. Many of the lace makers carry on their work in the public plaza and on the promenade along the water front near the hotels. They usually have with them a number of completed articles for sale to tourists. While the women who are engaged in the industry frequently sell their product to chance purchasers, the local trade, which is large on account of the great number of tourists who frequent this section, is carried on at several small shops, many of which handle little besides lace. The local lace merchants either furnish the thread and patterns to the workers and receive the completed article, paying a fixed price for the work, or else they buy the finished articles directly from the maker who may carry on the work independently of the dealer, as good work always finds a ready market. The local dealers also dispose of the product throughout Italy, to French, and, less frequently, to American buyers who come to Genoa and Rapallo.

It was said that there were no public or convent schools in Rapallo where lace making is taught. There are four or five "centers" where 15 or 20 girls gather daily at the home of an expert lace maker, who receives a small gratuity for teaching her art.

A good worker earns about 40 centavos a day or, if she is unusually expert, 50 centavos. There are designers in the employ of the merchants, and some of the independent workers make their own designs. There was only one independent professional designer in Rapallo.

CANTÚ.

Cantú is a few miles south of Como in the extreme northern part of Italy. It has long been famous as a center of the bobbin-lace industry, which was introduced here in the sixteenth century by the nuns of the Benedictine order. The work here is carried on under conditions similar to those which prevail in Rapallo, but the lace is much finer, both in design and execution, and the industry is more widely extended. There are probably between

10,000 and 15,000 lace makers in the district. They earn from 40 to 70 centavos a day, depending upon their expertness and also upon the season; they receive more in the summer months than in the winter.

Lace making is carried on in Cantú and the surrounding region as an adjunct to the other occupations of the inhabitants. There are many factories here, and it is a rich agricultural district requiring the labor of a large part of the population during certain seasons. The work is carried on almost exclusively in the homes. The older women of the household take up their cushions during spare moments, the smaller children set to work after school hours, and are later joined by their older sisters when they return from the factories and fields.

CANTÚ CABINETWORK.

While in Cantú I visited two of the three permanent exhibits of cabinetwork there. Cabinetmaking is carried on in Cantú as a home industry. There are no large factories. The industry is controlled by coöperative associations which dispose of the product of the individual workers. The association places the finished articles on exhibit, charging a small annual rental for floor space in the exhibition buildings. An attendant or salesman is employed to look after each exhibit. His duties are to conduct visitors through the rooms where the furniture is displayed and to make sales. He receives a fixed salary, but no commission on sales and is not authorized to alter prices. This latter provision is made so that there may be no collusion between the attendant and certain exhibitors to their mutual advantage and to the manifest injury of other exhibitors who have no such understanding with the attendant. Prices can be changed only by the owners of the articles.

The exhibit buildings were large and well lighted, with large rooms. They contained approximately 1,000 square meters of floor space each. The furniture was well arranged in long rows so that it could be readily inspected by passing down the aisles. The articles included wardrobes, buffets, sideboards, dressers, and complete bedroom and dining sets. Wardrobes and buffets predominated.

The work was high grade in every respect. The designs were modern; the attendants told me that the elaborate carving and inlaying of a few years ago had been reduced to the minimum in response to the demands of the trade. The small amount of

carving and inlaying that I observed was well executed and in excellent taste.

Only woods of the finest quality were employed; they were, for the most part, hardwoods of many varieties from South and Central America.

The product was disposed of locally and to buyers from other parts of Italy, from other European countries, and even from the United States. At least one large concern in Como handled Cantú furniture exclusively; Como is a tourist resort on the direct route from Milan to northern Europe. Salesrooms are also maintained in other centers of northern Italy.

While cabinetmaking is an old industry in Cantú, it is only in recent years that it has assumed large proportions. The first permanent exhibition was founded in 1893. The development of this important industry, away in the interior of a European country so far from the source of supply of the raw materials, constitutes a practical object lesson for the Philippines.

The principle of coöperation is very successfully carried out in the Cantú cabinetmaking industry. I believe it would be advisable to encourage the establishment of such coöperative associations here in the Philippines; but whether or not this policy is practicable and could be fully carried out here, I believe it is well within the sphere of the Philippine Government to give to Filipino craftsmen practically all of the benefits they would receive from such associations. The Italian association known as the *Industrie Femminili Italiane*, mention of which will be made in succeeding paragraphs, gives to Italian craftsmen the benefits they would receive under a purely coöperative association, but at the same time it retains absolute control over its operations, which are conducted solely in the interest of the small craftsmen.

THE PROMOTION OF THE HANDICRAFTS IN ITALY.

Italy, in common with other European countries, is keenly alive to the necessity of reviving and establishing the household industries in order to ameliorate the condition of the peasant class and incidentally to arrest the tide of emigration. Various means are employed in the promotion of this object. Through private and governmental effort special schools are established, expositions are held, and associations for actively promoting the home industries are organized. The ministry of agriculture, industry, and commerce is issuing in several languages a series

of publications on "the artistic crafts of Italy." These booklets, as is stated in the foreword, are published "with a view of illustrating the many century-old artistic crafts of the country, and for distribution abroad in the interest of Italian industry and commerce."

EXPOSITIONS AND FAIRS.

Advantage is taken by the patrons of the small industries, by the associations of craftsmen, and by the dealers, manufacturers, and individual craftsmen of the numerous expositions held in Europe as well as in America to improve their respective industries. Through the agency of expositions markets are extended, improvement in workmanship and design is brought about by competition and comparison, and production and trade stimulated. Features of such expositions are displays of the craftsmen's best work, stocks of articles for sale, publications and folders descriptive of the exhibit and of the industry, and working exhibits of materials, equipment, and processes. Medals, diplomas, and other awards and honors conferred upon exhibitors are highly prized and are shown with pride to visitors in their shops and homes.

LE INDUSTRIE FEMMINILI ITALIANE.

One of the agencies instrumental in reviving and promoting the home industries of Italy is "Le Industrie Femminili Italiane," which was incorporated in Rome in 1903. The aims of this association are set forth in the following abstracts taken from one of the preliminary announcements:

The recent expositions of Chicago, Paris, and the *Exposizione e Vendita di Lavori Femminili* under the patronage of Her Majesty the Queen and Her Majesty the Queen Mother at Rome, have shown that the glorious traditions of Italian art still flourish in women's handicrafts, but that a commercial institution is necessary to open for them a steady and sure market.

In the last few years many beautiful ancient industries which had become almost extinct have revived under judicious patronage. Thus, at Perugia its antique industry of rugs and hangings in flame stitch; at Circello, carpet making in raised wool; at Cigoli, at Trespiano, at Quarrata, at Anghiari, at Miglierino in Tuscany, revived industries of textiles, rugs, and draperies remarkable for the originality of their designs and for the combinations of their coloring; at Burano, at Pellestrina, in Friuli, along the Ligurian coast, at Cantù, at Pescocostanzo in the Abruzzi, and at Isernia in the Province of Campobasso, the industry of lace making, furnishing employment to about 20,000 workwomen. But the work which is done in these little centers and in many others which are gradually forming, proceeds but slowly, and is but slightly remunerative, because there lacks a sure sale secured through convenient deposits and promoted by

constant advertisement. Temporary expositions are of little use, because the interest which the exhibits have aroused soon dies, as the business principles of to-day require a constant fostering of the commercial interest of every product. For this purpose the present Coöperative has been incorporated, and from its central store at Rome it will send out branches to all those places where a market offers for artistic and useful Italian handicrafts produced by women.

The Coöperative will ameliorate the condition of its contributors by means of a committee of patronesses of art, which will direct the style and quality of the products, insuring better goods and better pay.

Article 4 from the statute:

The object of the company is to promote and improve Italian handicrafts along lines inspired by knowledge of industrial art, and to so organize their trade that producers may receive the best remuneration. The Company exercises its artistic influence by means of a committee of patronesses and a jury to judge the work; it exercises its commercial activity through stores in which it will receive on deposit objects to be sold for the benefit of their producers, minus the percentage fixed by the council of administration as its due.

The central offices of the association are in Rome. From here it extends its influence throughout Italy by means of 31 regional committees and by the establishment of branch stores, agencies, schools, and small industrial centers. The facilities of the association are extended to the various schools and centers thus formed and to individual workers. Patterns and designs are furnished to the producers, and the articles fabricated by them are placed on exhibit without charge by the association after they have been passed upon and accepted by the technical board. Goods are not accepted for less than six months. Payments are made weekly or monthly, or at the request of the producer, a small percentage being deducted to cover the current expenses of the association.

In connection with the head office in Rome is the workshop and department of design with a skillful designer and several expert embroiderers. They prepare designs and execute the latest things in embroidery to be used as models and patterns by producers in Rome and in the schools and working centers which have been established in various parts of Italy.

The association is untiring in its efforts to develop the work of the schools and small centers. By means of its trimonthly bulletin it keeps them informed of its aims and of the opportunities open to women in the various handicrafts and of the rules and regulations which govern its relations with them. The permanent exhibit and salesrooms of the association in Rome are stocked with the best work from all parts of Italy. Other

effective means of promoting the purposes of the association are expositions, of which the one held in Milan in 1906 is a notable example.

ATTENTION GIVEN TO DESIGN.

Wherever the handicrafts, or any other industries involving a high degree of artistic ability, are successfully carried on a great deal of attention is given to drawing and design. Schools, museums, and commercial organizations and firms offer courses in design. Switzerland has a law requiring that a drawing school be maintained in each commune of the cantons; many of these are purely industrial in character. Many of the machine embroidery firms of St. Gall employ from 15 to 25 designers. The leading lace firms in Venice not only employ large numbers of expert designers, but also conduct special classes and courses in design. The exporting and importing concerns which supply the manufacturers with special designs with their orders also have competent men and women for the execution of this work. These designers are not only experts from the artistic or technical point of view, but they are required to keep in close touch with the trade in so far as it affects their work.

THE HOUSEHOLD-INDUSTRY PROBLEM IN THE PHILIPPINES.

Agriculture is, and probably will continue to be for a long period of time, the principal industrial pursuit of the Filipino people and will continue to occupy the attention of all but a small proportion of the male population. The scheme for the promotion of the household industries, then, is one which takes into account principally occupations for women, of whom there are some three and one-half millions in the Islands. It is probable that from one-half to two-thirds of these women could, with profit to themselves, take up some form of industry which could be pursued at their homes, or, in some instances, it may be that industries now carried on could be improved. The problem is a large one involving conditions that affect the economic welfare and prosperity of the people of the entire Archipelago.

The policy of Government aid and guidance in the promotion of the industries is firmly established in European countries. It is believed that the policy as adopted here should be extended so that there will be adequate governmental machinery not only to encourage and aid certain industries, but to firmly establish them from the ground up. Such a course should not involve competition with commercial firms, and the organization should be such that Government aid could be withdrawn when it is no longer needed.

SOME STATISTICAL STUDIES OF INDUSTRIAL WORK.

By LUTHER PARKER, *Industrial Inspector.*

In an article in THE PHILIPPINE CRAFTSMAN of July, 1912, on "The Direction and Limits of Industrial Work" in the schools of the Philippine Islands, a table was worked out (p. 52) covering the four general classes of the population with notations as to their economic and intellectual status, and with a brief discussion of suitable vocational work for each class. The statement was made (p. 51) that the industrial teachers had most to do with Class III, since the majority of the children in the public schools belong to this class. In the discussion of suitable vocational work it was stated that it was the same for the children belonging to both Class III and Class IV in the primary schools. It is the plan of the present article to deal with a more detailed discussion of the work of the two above-mentioned groups.

The industrial work of the schools has grown up by experimentation, and, due to local conditions, has in many instances been taught indiscriminately to both sexes and all grades. For example, a boy of the sixth grade has been seen engaged in weaving a buri book bag, which is properly work for girls of the lower primary grades.

Due to different inherent interests and capacities, the school industrial work falls naturally under two main heads, boys' work and girls' work, with a small middle zone wherein suitable work for both sexes is found.

The following table obtained from data given in the annual report of the Director of Education for 1911-12 shows the average number of pupils for each province, by grades and sexes, engaged in specified lines of industrial work:

	Grade.									
	I.		II.		III.		IV.		V.	
	Male.	Fe-male.	Male.	Fe-male.	Male.	Fe-male.	Male.	Fe-male.	Male.	Fe-male.
Sewing	29	500	1	240		131		67		38
Lace	8	96	9	136	6	10	4	64	1	28
Embroidery		51		63		78		61		35
Irish crochet		75		46	1	32	1	34		7
Cooking	5	5	8	6	10	10	8	27		38
Loom weaving	6	20	4	9	1	11		7		4
Mat making	486	412	111	86	22	18	5	3	2	1
Hat making	272	115	178	57	125	27	48	8	8	1
Slipper making	118	129	96	76	71	36	42	15	7	3
Basketry	1,053	337	634	126	372	31	183	11	58	1
Shopwork							272		91	
Gardening	435	73	412	39	375	17	234	8	54	1

	Grade.				Remarks on suitability of work for sexes grades, and communities.
	VI.		VII.		
	Male.	Fe- male.	Male.	Fe- male.	
Sewing -----		27		16	Girls' work, all grades. For use in home.
Lace -----		16		6	Girls' work, all grades above I. For use in home and for export from thickly populated districts.
Embroidery -----		78		16	Girls' work, intermediate grades. See remarks on lace.
Irish crochet -----		5		3	Girls' work, upper primary and lower intermediate grades. See remarks on lace.
Cooking -----	1	30	1	18	Girls' work, essentially. Upper primary and all intermediate grades. For the home.
Loom weaving -----		2		1	Girls' work, essentially. Upper primary and all intermediate grades in weaving community or where homespun is worn. For the home.
Mat making -----	2	1	1	1	Work for both sexes in first grade and for girls in the other grades of the primary course. Mats, bags, etc., for home use and interprovincial trade.
Hat making -----	1	1	1	1	For both sexes in primary grades where materials are abundant. For home use and for export.
Slipper making -----	1	1	1	1	Work for both sexes in upper primary grades and lower intermediate. For home use and export.
Basketry -----	10		4		Work for boys, essentially. For home use and export.
Shopwork -----	53		49		Work for boys in upper primary and in intermediate grades. For the improvement of the homes.
Gardening -----	79	1	20		Boys' work, essentially. For all grades above the first. To improve home food conditions.

Table setting forth a general classification of school industrial work for primary and intermediate grades:

BOYS' WORK.

I. Basketry:

1. Common—

- (a) Sauale weaves Grades I to III.
- (b) Rattan coil..... Grades II to IV.
- (c) Nito coil..... Grades II to IV.

2. Fancy—

- (a) Polangui Grades III to V.
- (b) Abaca coil..... Grades III to V.
- (c) Raffia coil..... Grades III to V.

II. Toolwork:

1. Woodwork—

- (a) Primary Grades III and IV.
- (b) Intermediate Grades V to VII.

2. Ironwork Grades V to VII.

3. Bamboo work..... Grades III to VI.

III. Gardening:

- 1. School Grades II to VII.
- 2. Home Grades II to VII.
- 3. Farm Grades V to VII.

GIRLS' WORK.

- I. Needlework:
1. Plain sewing..... Grades II to VII.
 2. Embroidery Grades III to VII.
 3. Laces Grades II to VI.
 4. Crochet Grades II to VI.
 5. Tatting Grades II to IV.
- II. Loom weaving:
1. Hand loom—
 - (a) "Sicad" Grades III to V.
 - (b) Desk loom..... Grades III to V.
 2. Foot loom—
 - (a) Ordinary Grades IV to VII.
 - (b) Matting Grades IV and V.
- III. Cooking:
1. Plain Grades III to V.
 2. Fancy Grade VI.
 3. Fruits Grades VI and VII.

BOYS OR GIRLS.

Minor handweaving:

1. Hats Grades II to IV, both sexes.
2. Mats..... } Grade I, both sexes.
 } Grade II to IV, girls.
3. Slippers..... Grades II to V, both sexes.
4. Hand bags..... Grades II to V, both sexes.
5. Coir door mats..... Grades II to IV, boys.

The above table does not take up the detailed distribution of all lines of work under each subhead. For example, under "plain sewing" a further subdivision could be made of (a) simple stitches, Grades I and II; (b) dolls' clothes, Grades III and IV; (c) garments, Grades IV to VII.

Under "laces" the following subdivisions could be made: (a) Bobbin lace (1) cotton, Grades II and III; (2) linen, Grades IV to VII; (3) abaca, Grades III to V; etc. The above classifications will serve as a guide for a closer subdivision of certain lines of work. In the above scheme the work of boys and girls has been rather definitely separated, but there are instances in which a boy or girl may profitably take the work outlined for the other sex. For example, girls may make coil baskets, or do gardening in communities where such work is considered fitting. Flower gardening is always appropriate work for girls but in many communities at present would not be a practical course. Boys under certain exceptional conditions could be given needlework, cooking, and heavy loom weaving. The weaving of coir door mats is properly boys' work.

The grades given are industrial grades and are those in which the bulk of the work can most profitably be given. In some cases the work could perhaps be done fairly well above or below the grades mentioned. The industrial grade of a child is not necessarily the same as the academic grade, but depends upon the age, size, and capability of the child for the particular work selected. One of the most successful methods of handling the industrial work of the average primary school is to place the industrial work last on the program for the day—before athletics—arranging for all classes to be engaged in industrial work at the same period. Pupils can thus be dispatched to their respective industrial classes disregarding their academic qualifications for the time being. Under this plan each classroom teacher can be adequately trained in some one line of work. This plan does away with the necessity for special industrial teachers trained to do all kinds of industrial work, perhaps indifferently, and demanding a salary beyond the resources of the average municipality.

The following figures show the approximate value and relative per cent of value of the articles sent to the industrial exhibition of the Bureau of Education at Manila in February, 1913:

	Value.	Per cent.
I. Needlework:		
Embroidery	P11,819.37	26.4
Lace, bobbin	3,903.50	8.7
Irish crochet	3,749.40	8.3
Plain sewing	44.80	.001
Total	19,517.07	43.5
II. Woodwork	11,187.09	25
III. Miscellaneous	5,461.77	12.2
IV. Baskets:		
Various	1,307.21	2.9
Waste	943.01	2.1
Coiled	899.33	2
Work	827.15	1.8
Lunch	603.80	1.3
Market	400.75	.8
Total	4,981.25	10.9
V. Hand bags	1,501.88	3.3
VI. Slippers	1,060.90	2.3
VII. Hats	481.83	1
VIII. Mats and mattings	290.25	.6
IX. Preserved fruits	193.95	.4
X. Bamboo furniture	36.40	.08
Grand total	44,712.39	100

The above figures represent the growth of school industrial work during several years of experimentation aided and directed each year by the sales exhibits, both Insular and local.

It will be noted that the amount of girls' work sent to the Insular exhibition is large when the proportion of girls and boys in the schools is considered (about 36 per cent girls in January, 1913).

This is due, in part, to the fact that many boys take gardening and woodwork, the products of which are used locally, while most of the girls' work is of a character more suitable for exhibition, such as lace, embroidery, and crochet.

Much of the work of the boys is in shopwork and basketry, the products of which, in the lower grades, go to the furnishing of the home.

In the exhibition to be held in Manila in 1914 it is planned to have approximately 50,000 articles displayed with an approximate total valuation of ₱100,000 distributed among the various lines of work as follows: Needlework, 40 per cent; hand weaving, 25 per cent; miscellaneous, 20 per cent; woodwork, 14 per cent; cooking, 1 per cent.

While this is rather a large order for the schools to fill, it is felt that it will not only test the organization as to its business capacity and assist in extending the industrial work in an effective way to every corner of the Islands, but also will furnish data of practical value for the future guidance and direction of the work.

THEORY VS. PRACTICE.

How often do we see theory and practice referred to in this manner. The right way would be to say "theory and practice," not "theory versus practice." If theory and practice appear to disagree, either the theory or the practice is wrong, for when rightly applied, theory goes hand in hand with practice everywhere. There is no shop operation so simple that it does not in some way involve the application of a theoretical principle. There is no designer or mechanical engineer, no matter how highly educated, who can successfully design the simplest device without taking into account some practical requirement. The man who looks upon theory as an abstract matter, useless in his practical work, merely proclaims his ignorance. The man who prizes theory so highly that he believes he can afford to disregard the practical requirements and leave them to the shopman to decide, thinking that it is below his own dignity to bother with such details, paves the way for inefficiency and confusion.

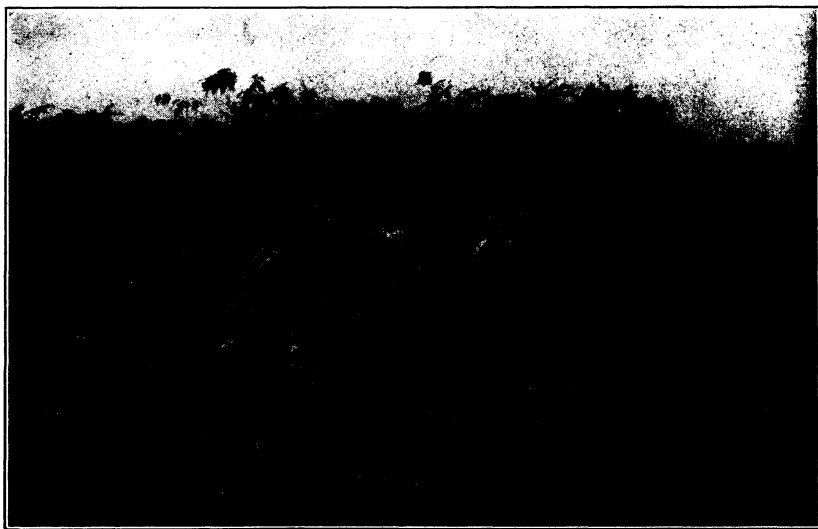
—*Exchange.*

KILOG.

By R. G. MCLEOD, *Division Superintendent of Schools, Laguna.*

KILOG (*Gleichenia linearis*) is a branching fern which usually grows in the uplands. Where the plant grows in the open exposed to the winds, it is thick and bushy, completely covering the ground. In the forest the plant often attains a length of more than 9 meters.

Although the stems of the larger plants are only 5 centimeters in diameter at the base, they manage to hold a more or less upright position by throwing their branches across those of a tree or preferably across neighboring kilog plants. The branches are



Kilog in its natural state.

nearly at right angles to the main stem and develop smaller branches which are in pairs and at almost right angles to the stem. So the tops of a number of large kilog plants become a tangled mass which the worst baguio cannot blow apart.

The internodes vary in length, the largest from 1 to 4 meters long, being at the base. They are naturally shorter near the top and at the ends of the branches. This characteristic is important, as the length of the kilog fiber is the length of the internode. A very large kilog plant with its branches will have 15 meters of stem containing fiber. In the center of the stem,

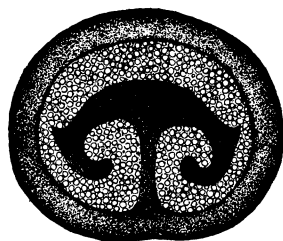
surrounded by the pith, is the fiber, which readily breaks up into three strands. The central strand is thick and wide, while the two side strands are fine and tough. The plant, therefore, produces 45 meters of useful fiber.

All shades, from a light brown to a greenish black, may be produced by burying the fiber in the mud or in a carabao wallow for a period of from twelve to forty-eight hours. It is very difficult to produce fiber of the same color, because of varying chemical compositions of mud and the different age, size, and condition of the fiber. The developing of shades and luster will

have to be learned by experience until the process is placed on a more scientific basis. Up to date the most satisfactory results have been obtained by burying the fiber in the most thoroughly mixed and the strongest smelling of carabao wallows.



Kilog.



A cross section of kilog, magnified about 2½ times.

Kilog furnishes an excellent weaver for small baskets and a very attractive winder for trays, coiled baskets, rims, and handles.

NOTES FROM DUTCH GUIANA.

The public schools are attended by 2,965 children, which represents 3.3 per cent of the total population. The cost of education amounts to \$149,432.80. Paramaribo has an industrial school for carpenters and cabinetmakers. An engineering school is also maintained by the government.

NOTES FROM TOGO, AFRICA.

There are 4 government schools in the protectorate of Togo, 3 primary and 1 intermediate. In addition to these there are 365 mission schools. There is no attempt at a general education, but efforts are being made to train a small number of selected pupils in German. The mission schools receive some government assistance, proportional to the number of pupils passing the standard examination. In order to make agricultural instruction in the 4 schools more efficient, an agricultural course for teachers of mission schools is held under the direction of the agriculture experts of the government. For the instruction of the girls who are enrolled in the mission schools, the government has furnished a number of hand-power washing machines, sewing machines, corn mills, etc.

Manual-training schools are maintained by the Catholic mission in Lome and Talime. Their courses of study include cabinetmaking, blacksmithing, locksmithing, tailoring, shoemaking, painting, printing, and bookbinding.

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INDUSTRIAL INSTRUCTION IN COCHIN CHINA.

From a report rendered to the Director of Education by Hubert G. Baugh, American consul at Saigon, Cochin China, it was learned that this country has six industrial schools whose teachers, at least in the school at Saigon, come from the schools of arts and trades in France. Instruction is given in iron and wood work, embroidery, incrustation of wood, jewelry, and work on tortoise shells. The woodwork includes carpentry, cabinet work, sculpture, and carriage making. The students in these "professional schools" are all foundation students, supported by the government. In addition to the government schools there is a trade school in Saigon, in which the students are mainly Eurasians. This school is supported by private funds, and trains firemen, mechanics, and chauffeurs.

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A REPORT FROM PERU.

The consul-general of Peru writes that no special attention is being given to industrial instruction, although several attempts have been made in Lima, without much success, under the direction of European teachers. Failure, however, is not due to the attitude of children or people so much as lack of materials with which to work and of system in the administration. Fairly good work is being done in the trade school, but the influence of this school is very much limited.

POLICY AND PROGRESS OF EDUCATION IN INDIA.

The American vice-consul-general at Calcutta, India, has reported to the Director of Education that special attention is being paid to industrial instruction which is ordinarily given in special schools. He states that, judging from the popularity of technical institutes, industrial instruction is a success, and employment sure. This judgment is strengthened by such figures as can be collected regarding the careers of old students. The State also offers scholarships to young Indians to receive industrial instruction in Europe. Many, however, who have received such foreign instruction frequently find difficulty in securing employment upon their return to India, and it is believed that training at home is more suitable than that secured abroad.

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TRINIDAD, BRITISH WEST INDIES.

Franklin D. Hale, American consul at Fort Spain, Trinidad, British West Indies, writes that very little attention is being given to special industrial training, although its introduction is now being urged by those who are most progressive in this line. It is hoped that in the near future valuable work of this kind may be introduced in the schools, especially along agricultural lines, as Trinidad is a country definitely devoted to agricultural pursuits.

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BANGKOK, SIAM.

The American consul at Bangkok, Siam, reports that not much attention has been given to industrial work, although technical schools of various kinds are being opened. Manual training and practical instruction along certain lines are now being offered in various courses, but there are few, if any, industrial schools in the ordinary sense of the term.

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LIBERIAN SCHOOLS.

The American minister at Monrovia, Liberia, reports that the public-school system in Liberia is greatly hampered on account of lack of funds, and that only recently has the Liberian government devoted serious attention to educational matters. No attention has thus far been paid to industrial education, but the department of public instruction is now considering plans looking to the institution of technical and agricultural schools.

EDITORIAL.

Only a short eighteen months remain before the opening of the Panama-Pacific Exposition at San Francisco, and during this time preparations must be made and completed for our representation in what purposes to be one of the greatest of

**Panama-Pacific
Exposition—1915.**

world's fairs. Fortunately for us, the accumulated experience derived from our participation in the world's fair at St. Louis and in the carnival exhibits in Manila stands us in good stead. Based upon this experience, definite instructions are being sent out to various provinces as to the nature and number of articles which should be prepared for the 1914 carnival. The total amount of articles requested will pass the ₱100,000 mark. The articles made in response to this request which come up to the necessary standard will be set aside or purchased by the Bureau for display at the Panama-Pacific Exposition.

One of the real tests of the comparative advancement of industrial work in the various divisions will be made in the filling of this order and in the selection or rejection of the articles forwarded. Not only will this be a comparative test of efficiency, but the net result will be a standard by which millions of visitors at San Francisco will gauge the work of our public schools.

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The development of most of the trade schools throughout the provinces has reached such a stage that no more emphasis need be laid upon cabinetmaking. There is, of course, room for considerable improvement in this line of work,

**More Emphasis
upon Carpentry.**

but it is believed that this improvement should be intensive rather than extensive. Furniture designs should in many places be made to conform with accepted standards, and the grade of workmanship cannot be held up to an excessive degree of superiority. Attention should be paid especially, however, to the introduction in some places, and extension in others, of actual building work.

Considerable work has been done in a number of schools in the construction of buildings. In Iloilo the trade-school pupils have built a number of cottages in their own province and have done contract work in Occidental Negros. In Bulacan, a great deal of interior finishing in some of the new Government buildings has been done entirely by trade-school boys. During the past few

years the carpentry pupils in the Philippine School of Arts and Trades have constructed five Bureau of Education exposition buildings, four primary woodworking shops for the city of Manila, a garage, storeroom, concrete oil house, wheelwrighting shop, and restaurant in their own school; have erected barns and sheds for the quartermaster department; and have rebuilt the fence at the Deaf and Blind School. In fact, a building course forms a part of the curriculum. Pupils are admitted to this course after having completed two years of woodworking. Their shopwork is devoted wholly to construction work and special attention is paid to building plans and specifications. It is time that all trade schools should begin to lay plans for definite work along this line, as the field for trained carpenters, able to take charge of small building projects, is large and the remuneration for this kind of labor is considerably above the average wage of the ordinary mechanic. The building trade offers good opportunities for industrious and well-trained boys, and trade-school principals should arrange for the training and placing of suitable candidates in this kind of work.

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There has been a considerable increase during the past two years in the use of foot-power sewing machines in the manufacture of embroidery in Manila and in several provinces. The product is similar to that made on the power embroidery machines of Europe and the worker is brought into competition with a machine requiring one operator and two attendants capable of turning out many times the amount of embroidery that can be produced by one sewing-machine operator. The industry should be encouraged only to the extent in which it supplies the demands of the local trade and provides satisfactory remuneration for the worker.

**Use of Machines
in Embroidery.**

The Bureau of Education does not advocate the use of embroidery machines in the public schools, but prefers to foster the natural aptitude of the Filipino women in the production of high-grade hand embroidery, which offers greater opportunity in the way of financial remuneration and does not bring the worker into direct competition with the power machines of Europe.

The proof of the pudding is the eating thereof, so the old adage runs, and the final test of our public schools lies in the answer to the question, "What becomes of our pupils?" This question is one that is facing us as well as every educational system in the United States. In these days of educational ferment and unrest, no educational institution can justify its existence or claim public support by pointing simply to its magnificent buildings, or to its famous teaching force, or to its special methods of instruction, or to the cultural or vocational content of its curriculum. More than any or all of these requirements are demanded. The public must be shown that the institution can and does deliver the goods in the matter of turning out men and women of real value to the world.

**What Becomes
of Our Pupils.**

The leading schools and colleges in the United States have administrative departments whose sole duty is to keep in touch with graduates and former students, so that when the inevitable day of trial arrives they may be able to justify their existence by telling what becomes of their students. Here in the Philippines, the need of follow-up systems is of even greater importance as showing the way the wind is blowing and indicating the direction in which it is necessary to steer our educational course.

We cannot be satisfied simply with having a large number of pupils in our schools, with the erection of well-built, permanent school buildings, with the continuing advancement of the teaching force, with the existence of a highly developed course of industrial instruction. Still more is required. The ultimate test of our educational system lies in the success and work of our graduates. Rough calculations as to what becomes of the pupils after leaving school will not be satisfactory. Definite information must be available. The preparation and maintenance of such records will involve a considerable amount of labor and will materially increase the large amount of paper work required of principal and supervising teachers. It is doubtful, however, whether any other single line of work of the teaching force will be productive of such good results, both in the satisfaction of knowing the work which our former pupils are doing and of using this knowledge in the formation of our educational program, as that of following up the records of our pupils after they leave school.

THE PHILIPPINE CRAFTSMAN goes to various classes of readers—to Americans not in the Bureau of Education, both in the Philippines and in the United States; to American teachers; and to Filipino teachers. Each of these classes contains various subdivisions. The first class includes persons who are directly interested in particular phases of our industrial work and others who care for only a general outline of what we are attempting to do. The American employees of the Bureau include some who are interested mainly in academic work, others whose special interests lie in industrial work, and still others whose work is of a purely supervisory and administrative nature. The Filipino readers range from those who have no more than an intermediate education up to those who have completed courses in colleges and universities. With such a diverse range of readers it is impossible for us to publish material, all of which shall appeal either to the whole field or to any one subsection thereof.

The Philippine
Craftsman's Field.

It is the purpose of THE PHILIPPINE CRAFTSMAN to furnish its readers in the course of each volume a fairly complete survey of the industrial phases of the industrial system in vogue in the Islands. It plans also to give definite, concrete information upon special phases of industrial work which may be of direct value to those engaged in such work.

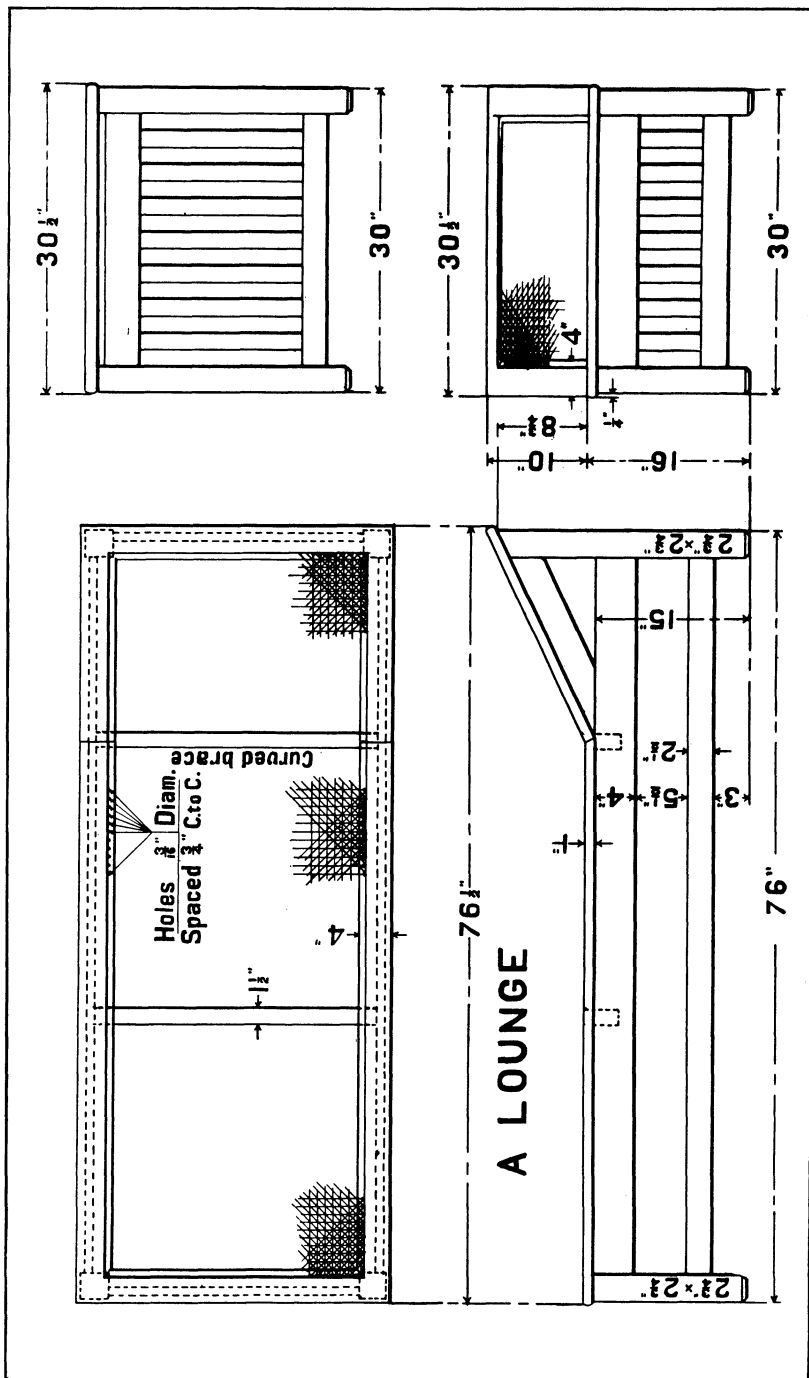
While THE PHILIPPINE CRAFTSMAN plans to keep its readers in the United States in touch with the progress of industrial education in the Philippine Islands, its primary field lies in these Islands. It plans to make its volumes of actual value, as references and as sources of valuable information, not only to industrial teachers but to all who are interested in the industrial progress of the Filipino people.

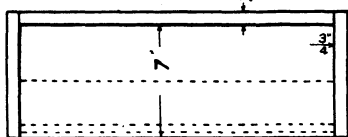
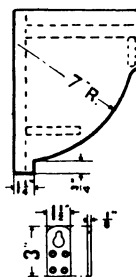
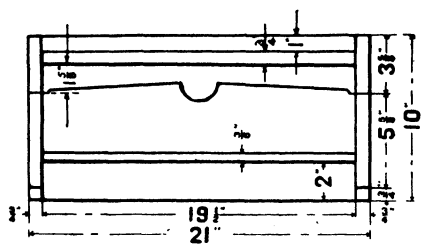
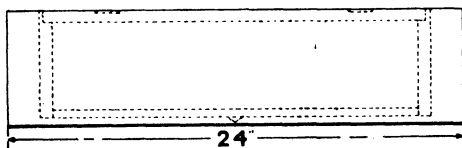
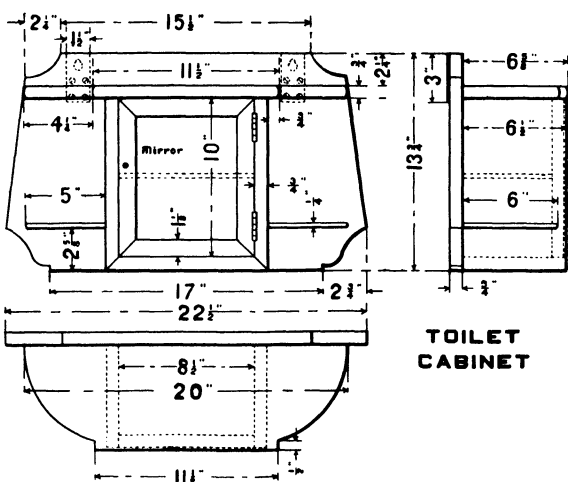
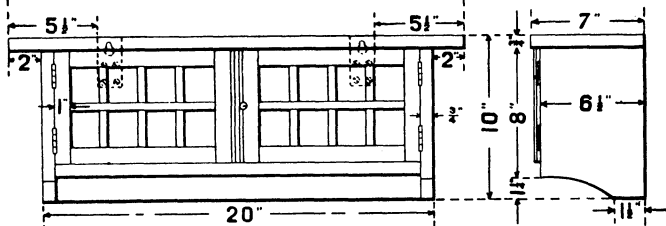
INDUSTRIAL MUSEUM AND INDUSTRIAL REFERENCE LIBRARY.

Industrial teachers are especially invited to visit the industrial museum of the Bureau of Education and inspect the lines of work in which they are particularly interested as well as the general fiber exhibit, also to take note of the books in the industrial reference library.

The museum and library are open each day during the same hours observed by the rest of the General Office; viz, Monday to Friday, 8 to 12 a. m. and 1 to 4 p. m.; Saturday, 8 a. m. to 1 p. m.

The entrance to the museum is on Calle Cabildo. The library is upstairs in the industrial and publications division.



**CLOCK
SHELF****MEDICINE
CABINET****TOILET
CABINET**

INDUSTRIAL NOTES.

Magdeburg, Germany, is to have a school for the special training of women and girls as shop clerks. The city of Berlin has already provided such training by means of a special course for sales girls in the new continuation school.

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A special course in picture framing is given in the Amelia High School, Amelia, Va., and during the past year or two more than a thousand neatly framed pictures have gone from the school manual-training shop into the pupils' homes.

○

During the past school year, the Philippine School of Arts and Trades turned out commercial work amounting to a total of ₱46,090.68. Of this amount the woodworking departments were credited with ₱31,685.17, the ironworking departments with ₱13,342.94, and the balance to drawing and pottery. These figures show an increase of ₱12,956.25 over those for the preceding year.

○

Last March 25 pupils of the Philippine School of Arts and Trades received certificates showing the successful completion of a four-year course in woodworking. One of these graduates is ill and unable to work. Two are continuing school work in order to pursue more advanced studies. One is engaged in the Bureau of Supply in polishing and repairing furniture. Another is employed by the Bureau of Forestry and is working on the preparation of Philippine woods for exhibition purposes. The remaining 20 are all employed as woodworking teachers.

ANAHAT.

"Anahat" is the Visayan name for a vinelike fern that is now used as a decorative material in weaving in Leyte. It was first discovered in the dense forests near the mountain tops, but has since been found to be plentiful along the banks of streams.

Anahat is somewhat like nito. As it grows older the leaves change from a green to a light brown color. Anahat has a bark or skin which is peeled off, and the inside is the part used in weaving. The valuable part of nito is the outside, but the valuable part of anahat is the inside. The tensile strength of anahat is greater than that of the nito fern.

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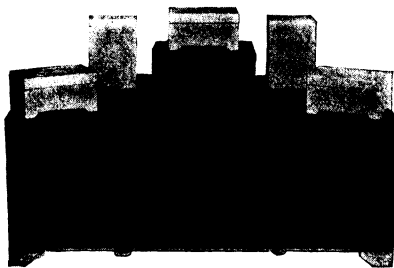
CARVED LANETE BOXES.

Community industries are among the most interesting and important features of the economic life of Ilocos Sur. The furniture industry of San Vicente is perhaps the best example. From time out of mind, a group of 50 or 60 families, which comprises the largest part of the *poblacion*, has been engaged in wood carving and the making of chairs, beds, aparadors, and other articles of furniture. The town furnishes the province with its carpenters. Its furniture has found its way beyond the local provincial markets to Cagayan, La Union, Pangasinan, Manila, and even farther south, and the reputation of San Vicente has increased out of all proportion to its size.

There seem to be no traditions among the furniture makers as to the beginnings of the industry. The town may have been an overflow from Vigan. The agricultural lands

about San Vicente are of poor quality. They are not sufficient for the support of the people and, as elsewhere in the Ilocano provinces, the inhabitants turned to something else. The carpenters owe to the Spaniards many of the ideas that they apply every day in the making of their furniture. The making of statues and images, they say, was taught them by some wandering Tagalogs who learned the art from the Spaniards. The carving of minor articles, such as boxes and picture frames, from narra, ipil, and lanete is of a comparatively late origin.

The first carved boxes from San Vicente were made of narra, ipil, and other hardwoods. The work of carving these boxes was difficult on



Carved lanete boxes.

account of the stiffness and firmness of the wood fibers. Lanete, which has a uniform white color and soft fibers, has superseded the harder woods for the most part. The wood carvers of San Vicente have been given the credit for being the pioneers in carving lanete boxes.

In appearance and size the lanete resembles the molave tree. The leaves are lance-shaped and are arranged in two flat rows, one on each side of the twig. The tree is old enough to be cut when the trunk is 30 centimeters in diameter, but the older it is the better for purposes of manufacture. The wood carvers of San Vicente procure the lanete logs for the most part from the neighboring barrios of San Ildefonso and

Santa Catalina. The wood is not good for building purposes, because it warps and checks easily. It requires a great deal of ingenuity to secure pieces that can be used for the larger sizes of boxes or for the chairs. As a consequence most of the articles made are small. The standard box is about 10 by 21 by 13 centimeters and is adapted for holding jewels, handkerchiefs, and other small articles. The larger boxes, chests, and picture frames are made only on special order or for the carnival trade.

The construction of the box itself is a fairly simple process. The lap joint is generally used and the joints nailed. The nails are driven with a nail set and round pegs of lanete glued over them. Legs of about one-half centimeter in height are added at the four corners. At first the box is entirely closed in. The cover is made by sawing off the top and fitting it with small brass hinges and a lock. The hinges and lock are the crudest part of the box and considerably lessen its value as an ornament.

The most important element in the design, as can be seen from the accompanying illustration, is the rosette. The central figure on the top of the box is ordinarily surrounded by quadrants of similar pattern or of smaller complete flower patterns in the corners. The sides of the box have an adapted design of the same motif, and the whole effect is pleasingly artistic. (ALFRED M. BRACE.)

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DRAWN WORK AT SWATOW AND PILLOW LACE AT AMOY.

While Division Superintendent C. E. Wright and Mrs. C. E. Wright were en route to the United States on leave of absence, they spent some time at Swatow and Amoy investigating the drawn work which is done at the former place and the pillow lace which is made at the latter.

The following notes were taken from one of Mr. Wright's letters:

Drawn work was first introduced in Swatow about twenty years ago by Mrs. Lyall of the English Presbyterian Mission. Her object in beginning the work was to provide something for the women and girls to do that would increase the revenues of their families. The people took to the work at once, brokers and merchants soon saw the commercial possibilities of the industry, and the work became firmly fixed in a very short space of time. Mrs. Lyall now takes no active part in the work in this organization beyond encouraging the women to pay fair wages and to use good materials.

The industry is a real household industry. The work is usually sent out among the families by the brokers and merchants, but in some cases the women engaged in business have girls come to their homes to work. In most cases the drawn work is paid for by the piece. Average workers earn from \$6 to \$7 Mexican per month, while a very few fine workers earn as much as \$10.

The homes which were visited by Mr. and Mrs. Wright were found to be clean and the workers seemed to be cheerful and happy. Mrs. Lyall informed them, however, that this was not the case in all sections of the country, as in some villages sweatshop methods have been introduced and the conditions natural to such methods were common.

A great deal of the embroidery is combined with the drawn work. This is handled by entirely separate sets of brokers and workers. Much of the drawn work done in Swatow is sent to Chow-Choo to have the embroidery placed on it. The finished articles are retailed in Swatow at about one-half the price they bring in the Philippines. Much of the drawn work sold on the steamers and on the streets is of a poor quality and on poor material.

The pillow-lace industry at Amoy, or, more properly speaking, at Kulangsu, which is that part of the city across the harbor from Amoy proper, seems to be less widely introduced than the drawn work of Swatow. This one small island seems to mark the boundary of its introduction in this section. Although it is not carried on over a wide area, it is certainly carried on very industriously. Every little shop or tienda has one or more spools ready for the shopkeepers at any moment. Little children hardly more than babies are found seated on stools by their doors talking and chattering while their fingers are handling the bobbins swiftly and accurately.

The pillow-lace industry seems to have been introduced by missionaries about forty years ago. About six years ago Miss Saunders took up the work of handling some of the products. She is only one of a considerable number of brokers handling this work and has three or four Chinese women at her home picking new patterns and helping to teach new workers.

When Mr. and Mrs. Wright called upon her they found that her house and yard were literally full of lace makers who had come with their lace. She has about one hundred persons who come to her for patterns and materials, sell their lace to her, and receive orders for special work. These hundred persons represent perhaps two or three times that number of workers. Miss Saunders imports her threads from Europe, depending upon magazines and papers for many new patterns. Her best patterns come to her from samples which are sent from all parts of the world with orders for duplicates. She pays for all of her work by the piece and states that the lace makers earn about the same as, or perhaps a little less than, the drawn workers at Swatow.

SOME EMBROIDERY SUGGESTIONS.

In placing the cloth in the frame, double the edges and do not stretch it too tight. In embroidering the center of a piece, care should be taken not to allow the arm to rest on the cloth, as the tension will draw the cloth and will make small holes where it is sewed to the frame. A slender piece of wood should be placed across the frame, and the arm should rest upon this.

WOMEN'S HANDKERCHIEFS.

(a) *Cutting*.—For a dozen handkerchiefs use handkerchief linen 36 inches (91.4 centimeters) wide and 48 inches (1.22 meters) long. Divide the width into three equal parts by drawing one thread at intervals of 12 inches (30.48 centimeters). Likewise divide the length into four equal parts. Then cut along the lines left by the drawn threads.

(b) *Hemstitching*.—At a distance of 11 millimeters (0.43 inch) from each edge of the cloth draw two threads. Fold so that the hem will be 0.14 inch (3.6 millimeters) wide. Hemstitch with No. 450 Alexander cotton thread or its equivalent. In folding the hem, a small square is formed in each corner, an outer side of which is open; this should always be neatly closed in hemming. Be sure that these corners are perfectly square.

(c) *Embroidering*.—Place the design in the corner 0.276 inch (7 millimeters) from the hem; see that it is the same distance from each side.

Men's handkerchiefs should be 18 inches (45.7 centimeters) square, with a 0.55-inch (1.4-centimeter) hem. They should contain no embroidery except an initial or monogram.

WAIST FRONTS.

Materials.—Batiste, 39.37 inches (1 meter) wide; pearline, 32 inches (81.3 centimeters) wide; linen, 36 inches (91.4 centimeters) wide.

The materials named above come in the indicated widths. The material for the front, collar, and cuffs is cut before it is embroidered. The front should be 25 inches (63.5 centimeters) long in any of the above widths. A strip 18 by 3 inches (45.7 by 7.6 centimeters) should be cut for the collar, and two strips 9 by 3 inches (22.9 by 7.6 centimeters) for the cuffs. Never cut these strips off the side. For linen waists the collar and cuff strips should be 6 inches (15.2 centimeters) wide.

Placing the design.—Fold the cloth in the center so that the selvaage edges are together, to make a crease. Place the design 5 inches (12.7 centimeters) from the top of the cloth with the center of the design on the crease. To do this, measure 5 inches from the top of the cloth, place a dot there with a pencil, and draw a line through the dot across the cloth and parallel with the top. Let the highest point of the design touch this line. Pin the design to the cloth in four places—at the top and bottom of the center (at the crease in the cloth) and at the highest points of the design (on the 5-inch line). Use a measure to insure that the highest part of the design is 5 inches from the edge of the cloth. The design, if a blue print, is placed under the material and is drawn on with a pencil; if a perforated pattern is used, the same general directions are followed, but the pattern is placed over the cloth.

The collar and cuff designs should be placed in the center of the strips.

After the embroidery is completed, fold the front so that it will be 18 inches (45.7 centimeters) long and 11 inches (28 centimeters) wide, with the design in the center. The cuffs and collars should be folded separately, in strips 2 inches (5 centimeters) wide, with the embroidery in the center; the collar should be neatly placed around the top of the

folded waist, with the embroidery in front, and the cuffs should be similarly placed at the bottom. They should be sewed lightly, at each end of the strips, to the waist front.

BABY DRESSES, KIMONO STYLE.

Materials.—Pearline, lawn, or parimila, the same width as for waists.

Length of material, 54 inches (1.37 meters), for a child up to 1 year old. To find the center of the cloth, fold lengthwise and then crosswise. Place the pattern with the center of the neck on the center of the cloth, or at the point where the two creases cross. Pin the pattern at the four corners, measuring to be sure that it is square with the cloth. The hem on the baby dresses should be 3 inches (7.6 centimeters) wide, but should not be put on unless ordered.

BABY DRESSES WITH ROUND SKIRTS.

Yoke same as for kimono style, using cloth 18 inches (45.7 centimeters) square. Fold the cloth crosswise and lengthwise to find the center. Place the design on the cloth so that the center of the design falls on the center of the cloth. Pin the pattern at the four corners. See that the design is square with the cloth.

For the skirt take two lengths of 23 inches (58.4 centimeters), full width. Make a 3-inch (7.6-centimeter) hem along the long side of each of these pieces and sew them together, making a piece approximately 20 inches (50.8 centimeters) wide and twice the width of the material in length. Place the embroidery design so that its lowest point will be $\frac{1}{2}$ inch (1.27 centimeters) above the hem.

Cloth for each of the sleeves is cut 10 inches (25.4 centimeters) square before being embroidered. For the right sleeve place the design, face up, under the cloth and copy; for the left sleeve place the design under the cloth face down; hold up to the light,

to see the lines of the design, and copy.

NIGHTGOWN, KIMONO STYLE.

Materials.—Good grade batiste, 39 inches; and nainsook, 39 inches.

Use $3\frac{1}{2}$ yards (3.20 meters) of cloth. Fold as for baby dresses, kimono style, taking care that the center of the design is in the center of the cloth and that it is straight with the cloth.

NIGHTGOWN, WITH SEPARATE YOKE AND SLEEVES.

For yoke use cloth 20 by 18 inches (50.8 by 45.7 centimeters). See that the design is placed in the center of the cloth. For two sleeves use cloth 26 inches (66 centimeters) square.

BABY BONNETS.

Material.—Pearline, parimila, and fine handkerchief linen.

Use cloth 8 by 12 inches (20.3 by 30.48 centimeters). The design should be placed on the cloth so as to allow a strip $4\frac{1}{2}$ inches (11.4 centimeters) wide for the bonnet part. Two strings or strips should be made 12 by $2\frac{1}{2}$ inches (30.48 by 6.35 centimeters), with a hem 3 millimeters wide at one end and on the two sides.

LUNCHEON SETS.

Material.—Linen, piña. A standard size for the centerpiece is 24 inches (60.9 centimeters), and for the three doilies, 10 inches (25.4 centimeters), 7 inches (17.8 centimeters), and $4\frac{1}{2}$ inches (11.4 centimeters). (FANNIE MCGEE.)

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FASHION NOTES.

From information gleaned from various trade publications it appears that laces are in great demand and that remunerative prices are being paid for popular, well-made grades of lace. However, it should be borne in mind that there is no demand for common lace of poor design and inferior workmanship. In *The Lace and Embroidery Review*, published by Clifford & Lawton, New York City, there are some interesting com-

ments on some of the lace and needle-work now in popular favor.

"Filet deserves special mention. Of course, it is recognized that filet had always a certain vogue and that there is always a reasonable demand for it. It is also understood that filet is considered usually a rather risky product, and both buyers and wholesalers are apt to think of it as something of which to be extremely careful. Though this may be true, yet a larger investment in filet than usual is justified this year, for certainly it is in a position of favor both abroad and here, that it has not occupied for some time.

"With the popularity of linen there is likely to be also a strong vogue for Clunys of all kinds, and the market shows a wider variety of these than for many years. Bearing in mind the expected fact that linens are to be specially strong in dresses, we can expect Cluny collars of all kinds to be in the lead among the real lace creations. Irish crochet will also have its usual demand.

"The position expected for Paraguay or Teneriffe effects has materialized and Teneriffes are really dominant in the market to-day. In the designs now in vogue the effect is usually that of Mexican drawn work, showing single threads in large quantities, and these shown not only radially but also parallel, at quite wide spaces, giving an openness of effect that is unusual. It is from this openness that Teneriffe laces get their definite character."

(NOTE.—It should be remembered that while the characteristic design of these laces is the well-known wheel or spider-web effect, yet the designs such as have been heretofore introduced in the schools of the Philippines are not in vogue.)

In speaking of collars the following statement is made:

"The epaulet effect that closes close under the chin and extends in points out over the shoulders, but not

far down the back, is considered to be the leading shape, although square collars of the sailor character are much seen.

"It is certainly a great year for jabots. In these the leading idea appears to be breadth and flatness. There seems to be no limit to the width of these creations.

"Plastron jabots is the term generally applied to those creations with rather square effect which lie over the bust and extend almost from shoulder to shoulder, giving the creation an effect of both a double jabot and the little vestee. These are usually attached to low collars of silken material and, frequently, to those of net or lace. Almost invariably they are ornamented with a row of brilliant buttons giving a little line of fiery color down the center or down both sides that is extremely effective. The high stock effect still holds in light, lacy material, but it is not considered favorably in heavier material."

Regarding handkerchiefs the following is said:

"While one does not find a great deal that is distinctly new in handkerchiefs, there are many interesting variations of old motifs. One-cornered effects continue to be very popular. The designs appear to have increased a little in size over those of last year. Initial handkerchiefs of all kinds will sell well, the plain dainty initials having a slight advantage over the decorated ones.

"Much is said regarding flounces. They are generally thought of as being in particularly good position for next season."

The Paris correspondent of the above magazine says:

"I have noticed a great many of them in different collections I have had the opportunity of looking over. Flounces are of all widths. The most favored are the 18 and 27 inch sizes.

"Turning to embroidery, I find that Madeira, Swiss, and Vosge embroideries are the ones that are specially in demand. There is a great deal of embroidery on linen and its imitations. The wheels of eyelets and the daisies, that have been so important in the Parisian and French embroidered gowns, are slipping out of favor.

"Before closing I must not forget to mention the new shape of waists. It is a sort of kimono effect, which is very loose and cut out under the arm. The sleeve looks as if it had been caught in the sash and it unfolds like a wing at every movement. The effect is extremely original and beautiful and to my mind promises to be very important in the fashion development of the season."

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NEW FIBERS FOR TEXTILE USE.

Fabrics known by the general name of vegetable silk are now being made from a number of vegetable fibers, and owing to recent researches this number is likely to increase before long. The fiber known as kapok has been in use for some time as a stuffing material for life belts, mattresses, and cushions, and it is now coming into use for making vegetable silk. At Chemnitz, Germany, the manufacture has been going on for several years past, and the kapok fibers are first put through a chemical treatment before spinning into threads. The kapok fiber comes from the plant known as *Ceiba pentandra*, but it is not the only source of vegetable silk, for in fact the same works is making use of the "akon" fiber, this being taken from the plant *Calotropis procera* and the like, which are of common growth in India, the Malay Archipelago, and East Africa. Good results are also obtained with the fibers of the *Chlorocodon Whytei*, a vine growing in the region of Amami. Another source of fiber is

the material which surrounds the seeds of *kickxia elastica* and others, and by a proper treatment these can be made up into threads which have somewhat the same luster as silk.—(Scientific American.)

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An "outside" instructor is employed in the Rochester, N. Y., schools. He supervises the work of shop-school students who are detailed to repair work or installation in any of the schools of the city outside of their own. By this means the students have the benefit of instruction at all times.—(From Vocational Education.)

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MANUAL ARTS STUDIES.

The household-arts department of the public schools of Chicago, Ill., has inaugurated a plan by which girls who attend the cooking classes may visit the Armour packing plant and learn how the cheaper cuts of meat are obtained. The aim of the visits is to make the girls familiar with the proper method of buying cheaper meat. Expert butchers cut up carcasses of beef for the inspection of the students. The visiting days are set for Wednesdays.—(From School Board Journal.)

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A sign of the times is found in the action of the Wakefield, Mass., school committee, which recently purchased a site for a new high school, including 10 acres of land to be used for practical work in connection with a future agricultural course.

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Plans are being perfected in Springfield, Mass., for utilizing one of the ward schools for the teaching of horticulture, truck farming, gardening, and related subjects. Land enough for the purpose is attached to this school building. A four-year course is planned.—(From Vocational Education.)

Seventeen hundred children in Dayton, Ohio, tilled backyard gardens, each 10 by 25 feet, last year under the supervision of the Dayton Parks and Playgrounds Association, and not only provided fresh vegetables for home use, but in many cases sold the produce for enough to buy textbooks and other school supplies.

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PROVINCIAL INDUSTRIAL EXHIBITS, TUGUEGARAO.

Mr. Lloyd G. Kirby, acting division superintendent of schools for Cagayan, has set the date for the provincial industrial exhibits for next December 23 to 26, inclusive. Each supervising district in Cagayan and Isabela, as well as the provincial, intermediate, and trade schools of these provinces, will have a separate booth.

Mr. Kirby has minutely outlined the variety and quantity of the number of articles required from each district and school. The materials to be used and the sizes of the articles to be made have been specifically designated in these circulars. By means of these directions, supervisors and principals have been informed as to the nature of the industrial work prescribed for their schools, and will be able to work along thoroughly defined lines until the arrival of the industrial supervisor.

COMPETITION DAY.

Each school in the combined division of Cagayan and Isabela is to have a competition day with three definite features; viz, academic exercises, industrial exhibits, and athletic contests. The winners in the school competition will be chosen to take part at the town competition. The point winners in the town contest will then take part in a district competition day, the winners of which will take part in a provincial competition day.

The dates for each meet were definitely designated by a division circular. Provincial meets will be held at Ilagan for Isabela and at Tuguegarao for Cagayan on December 11, 12, and 13. The final, or association meet, will be held at Tuguegarao, December 23 to 26, inclusive.

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USES OF SEAWEED.

Some interesting facts about seaweeds which are used as food or for producing vegetable gelatines or glues are brought out by Messrs. Perrot and Gatin in the annals of the French Oceanographic Institute. Seaweeds are not much used in Europe except for alkalies or iodine preparation. In the north coast regions of France the seaweed is used by the peasants as a manure upon the fields. Medical uses can be mentioned, and the variety called Iceland moss is collected in Brittany to a considerable extent, this reaching 20 tons of dry seaweed in 1904. One variety of seaweed is a very good vermifuge, and is extensively used for this purpose in Corsica. On account of the iodine which they contain, some seaweeds are remedies against goiter and scrofula. As to food uses, this seems to be limited to the Brittany region, and only the poorer population consumes it. Although limited in Europe, the use of seaweeds as food is widespread in the extreme Orient. In Japan, edible seaweed is prepared in a number of ways and it is much cultivated. Iodine is not manufactured in that country at present. One use is for preparing agar-agar, gelose, and vegetable glue. Seeing that the gelatines from this source are scarcely nutritious, the authors explain their extensive use by the manner of living, and as the populations consume great quantities of fish and rice it is thought that the gelatinous substances aid in digestion and in the intestinal functions.—(Scientific American.)

END OF THE OLDEST NEWSPAPER IN THE WORLD.

The president of the Chinese Republic recently suppressed the newspaper King-Bao, which undoubtedly was the oldest paper in the world. For 1,500 years it has reported the more important news not only of China, but also of foreign countries. At a time when the art of printing and journalism was as yet unknown in Europe, the Chinese Gong-Chung invented a means for making types from lead and silver, and in the year 400 A. D. the paper King-Bao was printed, and has since been issued regularly until recently. The first edition was printed on ten sheets of yellow silk, neatly tied together, and was thus sent to all the high officials of the Chinese Empire.—(From the Scientific American.)

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BASKETRY.

REPORT OF NATIONAL MUSEUM, 1912.

So much is said and written on the subject of basketry that a vocabulary is desirable. On some terms all are even now agreed. All things considered, words in common use should be adopted. There are two absolutely different kinds of technic employed, dividing basketry into woven and coiled. The former leads to the loom, the latter to the needle. It is not correct to speak of warp and weft in the latter, only in the former. The following terms and definitions are suggested—not arbitrarily, but subject always to amendment and common consent.

Basket.—A vessel or receptacle in textile material; a technic product resembling this.

Basketry.—A general term including (1) basket making, the process or art; (2) basket work, the technic or stitches, any textile motif resembling work in baskets; (3) basket ware, a collection of finished products.

Beading.—A strip of bark or a splint run in and out through the spaces in woven, or among the stitches in coiled, basketry.

Braidwork.—Fabric in which three or more elements are braided, as in some three-strand twined basketry. (See False braid.) Preferable to the word plaited. There may be flat, round, or square braids. The term sennit is also allowable.

Buttonhole stitch.—A series of half hitches, as in Fuegian coiled basketry.

Check.—Where warp and weft cross.

Checkerwork.—Basketwork in which the warp and weft are equally flexible and the checks are square or at least rectangular.

Chevron.—V-shaped ornament, in which two or more colored lines meet at an angle; for example, the device on the sleeve of a noncommissioned officer. (See Herringbone and Zigzag.)

Chinking.—Soft materials between hard stems in the foundation of coiled basketry.

Coil.—An element in basketry ornamentation. The varieties are plain coil, reversed coil, loop coil, continuous-loop coil.

Coiled basketry.—Type of basketwork in which a foundation of hard or soft material, arranged in a spiral, is held together by means of over and over sewing.

Crossed warp.—Type of basketwork in which two sets of warp cross each other at an angle—for interlacing weft, for seizing or wrapping (Makah), or for twined weaving, common in Attu wallets.

Decussations.—Crossing of warp at acute angles.

Diagonal weaving.—Passing weft over two or more elements, but not the same in adjoining rows. Used here chiefly of twined weaving to distinguish it from twilled weaving with single weft element; also run-

ning the weft at an angle, as in matting.

Diaper.—A surface decoration which shows a pattern by the relief or direction of warp and weft.

Designs.—Figures and patterns used in the ornamentation of basketry. Must not be confounded with "symbol."

Embroidery.—Ornamentation added after the basket is finished. (See False embroidery.)

Fagotting.—Same as hemstitch.

False braid.—An appearance of braid work on the margin of a basket made with a single splint in ball stitch or "racking seizing."

False embroidery.—An appearance of embroidery made on Tlinkit and other twined ware by wrapping the strands on the outside with colored material in the process of weaving.

Fiber.—A flexible substance composed of filaments, such as cedar bark, wild hemp, etc.

Frap.—To bind one element about another.

Fret.—The Greek ornament occurring in endless variety on basketry.

Furgate.—Said of stitches in coiled sewing intentionally and symmetrically split—bifurcate, trifurcate, etc.

Fylfot.—Ornament imitating a Greek cross with arms extended at right angles, all in the same direction; called also "swastika."

Gorrita.—The shallow basket bowl of the Pimas and other southwestern tribes.

Hemstitch.—Drawing warps together in groups of two or more and holding them by twined weavings. Seen in Aleutian openwork wallets. Called also "fagotting."

Herringbone.—Basketry designs in which chevron patterns are in parallel series.

Herringbone border.—A finish on coiled basketry in which, with a

single splint, the appearance of 3-ply braid is given. (See False braid.)

Hitched weft.—Basketwork in which the weft makes a half hitch about each warp element. In coiled work it would be hitched sewing, same as buttonhole stitch.

Hurdle.—A coarse form of basketwork in brush and trees for hunting and fishing purposes.

Imbricated ornament.—Coiled basketry in which a strip of soft material is folded back and forth over the stitches, overlapping like shingles on a roof or the folds in knife plaiting. Klikitat and Fraser River basketry are imbricated.

Impacted.—Driven close together, as the weft or stitches in basketry.

Insect.—A pattern worked separately into a basket. The Chilcat blankets are thus woven.

Interlacing.—The crossing and intertwining of parts, as in woven baskets and borders.

Interstices.—Open spaces left in weaving.

Knife plaiting.—See Imbricated ornament.

Lattice weaving.—Basketwork in which a frame of rods crossing at right angles is held together by wrapping the intersection with a single splint or ribbon, as in Makah basketry, or by a twined weft, as in the Pomo Tee weaving.

Multiple coil.—The foundation of coiled basketry made up of filaments, grass stems, or splints.

Muskemoot.—Loucheux netted bags of babiche. Coiled work without foundation.

Meander.—Crossed frets in basketry ornament.

Oblique weaving.—Chiefly in matting, where the weaving begins at one corner.

Osier.—Basket materials prepared from small stems of willow or similar plants. Shoots of dogwood (*Cornus stolonifera*) are called red osier.

BUREAU OF EDUCATION PUBLICATIONS.

(Abbreviated list.)

ANNUAL REPORTS:

- First to Twelfth Annual Reports of the Director of Education. (Supply exhausted.)
- Thirteenth Annual Report of the Director of Education. (In course of preparation.)

BULLETINS:

- 31. School and Home Gardening. (Now being revised.)
- 32. Courses in Mechanical and Free-hand Drawing, for Use in Trade and Intermediate Schools.
- 33. Philippine Hats. (Supply exhausted.)
- 34. Lace Making and Embroidery. (Supply exhausted.)
- 35. Housekeeping and Household Arts—A Manual for Work with the Girls in the Elementary Schools of the Philippine Islands. (Supply exhausted.)
- 37. School Buildings and Grounds.
- 38. School Buildings—Plans, Specifications, and Bills of Material.
- 39. A Manual of Free-hand Drawing for Philippine Primary Schools. (In course of preparation.)
- 40. Athletic Handbook for the Philippine Public Schools. (Now being revised.)
- 41. Service Manual of the Bureau of Education.
- 44. Libraries for Philippine Public Schools.
- 45. The School of Household Industries.
- 46. The Industrial Museum, Library, and Exhibits of the Bureau of Education.
- 47. Good Manners and Right Conduct.
- 48. A Course in Civics. (In course of preparation.)
- 49. Philippine Industrial Fibers. (In course of preparation.)
- 50. Arbor Day and School Holidays. (In course of preparation.)

BULLETINS—Continued.

- 51. The Philippine School of Commerce. 1913.
- 52. The Philippine School of Arts and Trades, Nautical Department. 1913.
- 53. Elementary Course in Plain Sewing. 1913.

CIVICO-EDUCATIONAL LECTURES:

- 1. The Rights and Duties of Citizens of the Philippines. (Supply limited.)
- 2. The Prevention of Diseases. (Supply limited.)
- 3. Rice. (Supply limited.)
- 4. Diseases of Animals. (Supply limited.)
- 5. Coconut Beetles. (Supply limited.)
- 6. The Housing of the Public Schools. (Supply limited.)
- 7. Coconuts.
- 8. Corn.

THE TEACHERS' ASSEMBLY HERALD:

- Volumes I, II, III, IV, and V. (Supply exhausted.)
- Volume VI, 1913.

TEXTBOOKS:

- Commercial Geography: The Materials of Commerce for the Philippines.
- Economic Conditions in the Philippines. (In course of preparation.)
- Supplementary Problems for Trade Schools and Trades Classes.

THE PHILIPPINE CRAFTSMAN:

- Volume I. (Supply limited.)
- Volume II. (Now current.)

THE PHILIPPINE CRAFTSMAN RE-PRINT SERIES:

- 1. Philippine Mats.

MISCELLANEOUS:

- Woodworking, a Manual of Elementary Carpentry for Philippine Public Schools.
- A Statement of Organization, Aims, and Conditions of Service in the Bureau of Education.
- A Talk on Health Conditions in the Philippines.

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